

**LPDES PERMIT NO. LA0005347, AI No. 27051****REVISED LPDES FACT SHEET and RATIONALE  
FOR THE DRAFT LOUISIANA POLLUTANT DISCHARGE ELIMINATION SYSTEM  
(LPDES) PERMIT TO DISCHARGE TO WATERS OF LOUISIANA**

- I. Company/Facility Name:** Lyondell Chemical Company  
Post Office Box 3411  
Lake Charles, Louisiana 70602
- II. Issuing Office:** Louisiana Department of Environmental Quality (LDEQ)  
Office of Environmental Services  
Post Office Box 4313  
Baton Rouge, Louisiana 70821-4313
- III. Prepared By:** Jenniffer Sheppard  
Industrial Water Permits Section  
Permits Division  
Phone #: 225-219-3138  
E-mail: jenniffer.sheppard@la.gov
- Date Prepared:** February 26, 2005  
Revised on March 8, 2006

**IV. Permit Action/Status:****A. Reason For Permit Action:**

Proposed reissuance of an expired Louisiana Pollutant Discharge Elimination System (LPDES) permit for a 5-year term following regulations promulgated at LAC 33:IX.2711/40 CFR 122.46\*.

- \* In order to ease the transition from NPDES to LPDES permits, dual regulatory references are provided where applicable. The LAC references are the legal references while the 40 CFR references are presented for informational purposes only. In most cases, LAC language is based on and is identical to the 40 CFR language. 40 CFR Parts 401 and 405-471 have been adopted by reference at LAC 33:IX.4903 and will not have dual references. In addition, state standards (LAC 33:IX. Chapter 11) will not have dual references.

LAC 33:IX Citations: Unless otherwise stated, citations to LAC 33:IX refer to promulgated regulations listed at Louisiana Administrative Code, Title 33, Part IX.

40 CFR Citations: Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations in accordance with the dates specified at LAC 33:IX.4901, 4903, and 2301.F.

- B. NPDES permit -** NPDES permit effective date: November 10, 1992  
NPDES permit expiration date: November 9, 1997

EPA has not retained enforcement authority.

- C. LWDPS permit -** LWDPS permit effective date: N/A  
LWDPS permit expiration date: N/A

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- D. Application received on October 24, 2003 and addendums/supplements received June 23, 2004, July 2004, August 2004, March 2005, and January 9, 2006 will supercede the May 2, 1997 and November 2002 submittals. Additional information via e-mail was received on January 19, 2006, January 24, 2006, February 2, 2006, and January 25, 2007.

**V. Facility Information:**

- A. Location - 900 Interstate 10 West in Westlake
- B. Applicant Activity -

According to the application, the Lyondell Chemical Company Lake Charles Plant is an existing chemical manufacturing facility that produces a variety of organic and inorganic chemicals including nitric acid, toluene diisocyanate (TDI), toluene diamine (TDA), and anhydrous hydrochloric and muriatic acid along with support operations and services such as a research laboratory, carbon monoxide and hydrogen production, the powerhouse, utilities, and wastewater treatment plant.

The Lake Charles facility also hosts a number of co-occupants that own and operate a variety of chemical manufacturing units and storage and distribution operations which include: BioLab (Trichloroisocyanuric acid [TCCA]); ARCH Chemical (hydrazine - Raschig and Ketazine processes); Air Products and Chemicals, Inc. (Oxygen and Nitrogen); Praxair (Carbon Monoxide & by-product hydrogen); Veolia (demineralized water); Tetra Chemicals (calcium chloride liquid storage); Olin Corporation (sodium hydroxide solution storage and distribution); and Reagent Chemicals and Research, Inc. (muriatic acid storage and distribution). A service agreement has been executed between Lyondell and the facility's co-occupants that states that Lyondell will treat and discharge wastewater and stormwater.

Lyondell Chemical Company's LPDES permit renewal application dated October 2003 requests consideration of a three (3) phased approach for production with limitations to reflect differences in operation during each phase. This request was withdrawn by Lyondell in a permit renewal application addendum submitted to this Office on June 23, 2004. As a result, all permit conditions in this permit will be based on Phase I only.

Lyondell has also planned to move Outfall 010 (alternate outfall numbers due to operational conditions - A10, B10, or C10) from its current location in Coon Island Loop to the Main Channel of the Calcasieu River. This relocated Outfall remains within the Subsegment 030301 and will be referred to Outfall D10, E10, F10, or G10.

Lyondell Chemical Company intermittently generates hydrostatic test waters. These discharges are currently permitted for discharge under the conditions presented in the Hydrostatic Test General Permit, LAG670019, governing such activities. At the request of Lyondell Chemical Company, the hydrostatic test discharges will be incorporated into this permit as Internal Outfall 500. Upon issuance a final permit, the Hydrostatic Test General Permit, LAG670019, will be terminated.

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A Draft permit was previously issued to Lyondell Chemical Company, dated August 8, 2005. The public comment period lasted through September 12, 2005. Comments to the draft permit were submitted by Lyondell Chemical Company, Arch Chemical, and URS. The comments were not formally addressed through response to comments due to issues of concern being addressed as part of this revision to the permit.

On October 19, 2005, Lyondell Chemical Company's corporate headquarters announced that the toluene diisocyanate (TDI) production train at the Lake Charles Chemical Complex would be permanently shutdown. Therefore, this draft permit proposes limitations during TDI shutdown as well as startup (to accommodate flexibility for the resumption of TDI production should there be need in the future). Several operating scenarios were identified as part of this revised draft. The scenarios are outlined in Part VIII of the Fact Sheet in the Summary of Proposed Changes.

- C. Technology Basis - (40 CFR Chapter 1, Subchapter N/Parts 401 and 405-471 have been adopted by reference at LAC 33:IX.4903)

<u>Guideline</u>	<u>Reference</u>
Organic Chemicals, Plastics, and Synthetic Fibers	40 CFR 414
<b>*Outfalls 010, A10, D10, or E10</b>	
Process Flow - 0.342 MGD	Subparts (G, H) & (I)
<u>Process Flow - 0.893 MGD</u>	Subparts (G, H) & (J)
Total Process Flow - 1.235 MGD	
<b>*Outfalls B10 or F10</b>	
Process Flow - 0.929 MGD	Subparts (G, H) & (J)
<b>*Outfalls C10 or G10</b>	
Process Flow - 0.698 MGD	Subparts (G, H) & (I)
<u>Process Flow - 1.181 MGD</u>	Subparts (G, H) & (J)
Total Process Flow - 1.879 MGD	

\* Outfalls will NOT be in operation at the same time. See Outfall descriptions in Part VII.

Inorganic Chemicals	
Hydrochloric Acid	40 CFR 415 (Subpart G [Reserved])
Nitric Acid	40 CFR 418.53(b) (Subpart E)
Oxygen and Nitrogen	40 CFR 415.492 (Subpart AW)
Carbon Monoxide and By-Product Hydrogen	40 CFR 415.332 (Subpart AG)

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Daily Production - break down Subparts G, E, AW, AG  
**(Outfalls A10, B10, C10, D10, E10, F10, or G10)**

*Subpart G	828 (1000 lbs/day)
*Subpart E	1,181.5 (1000 lbs/day)
*Subpart AW	156 (1000 lbs/day)
*Subpart AG	376.8 (1000 lbs/day)

Other sources of technology based limits:

LDEQ Stormwater Guidance, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA Region 6).  
 Louisiana Water Quality Management Plan for Sanitary Dischargers.  
 LDEQ Sanitary General Permits  
 LDEQ Hydrostatic Test General Permit  
 Best Professional Judgement

- D. Fee Rate -
1. Fee Rating Facility Type: Major
  2. Complexity Type: VI
  3. Wastewater Type: II
  4. SIC code: 2865, 2869, 4226, and 2819

- E. Continuous Facility Effluent Flow - 6.795 MGD.

- VI. Receiving Waters:** Calcasieu River Clooney Island Loop via local drainage (Outfalls 001, 008, 019, 020, 022, 029, & 500), Calcasieu River Coon Island Loop (existing Outfall 010 and Proposed Outfalls A10, B10, C10, 110, 210, 310, & 500), Calcasieu River Main Stem via local drainage (Proposed Outfall, D10, E10, F10, G10, 110, 210, 31A, & 500), and Bayou Verdine (Outfalls 025, 026, & 500).

**Existing Location - Outfalls 010, A10, B10, and C10**

1. TSS (15%), mg/L: 6.43
2. Average Hardness, mg/L CaCO<sub>3</sub>: 580.97
3. Critical Flow, cfs: 61.21
4. Mixing Zone Fraction: 1
5. Harmonic Mean Flow, cfs: 183.63
6. River Basin: Calcasieu River, Segment No. 030301
7. Designated Uses:  
 The designated uses are primary contact recreation, secondary contact recreation, and fish and wildlife propagation.

**Proposed Location - Outfalls D10, E10, F10, and G10**

1. TSS (15%), mg/L: 6.43
2. Average Hardness, mg/L CaCO<sub>3</sub>: 580.97
3. Critical Flow, cfs: 1208.89
4. Mixing Zone Fraction: 1/3
5. Harmonic Mean Flow, cfs: 3626.67

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6. River Basin: Calcasieu River, Segment No. 030301

7. Designated Uses:

The designated uses are primary contact recreation, secondary contact recreation, and fish and wildlife propagation.

#### **Clooney Island Loop - Outfall 001**

1. TSS (15%), mg/L: 6.43

2. Average Hardness, mg/L CaCO<sub>3</sub>: 580.97

3. Critical Flow, cfs: 54.17

4. Mixing Zone Fraction: 1

5. Harmonic Mean Flow, cfs: 162.51

6. River Basin: Calcasieu River, Segment No. 030301

7. Designated Uses:

The designated uses are primary contact recreation, secondary contact recreation, and fish and wildlife propagation.

Information based on the following: Water Quality Management Plan, Volume 5A, 1994; LAC 33:IX Chapter 11; Recommendation(s) from the Engineering Section. Hardness and 15% TSS data come from monitoring station # 27 / at the bridge on I-10 between Lake Charles and Westlake listed in Hardness and TSS Data for All LDEQ Ambient Stations for the Period of Record as of March 1998, LeBlanc and are included in a memo from Brian Baker to Jennifer Sheppard dated February 12, 2004.

#### **VII. Outfall Information:**

##### Outfall 001

- A. Type of wastewater - the discharge of process wastewater from the Nitric Acid Plant; non-process area stormwater; non-process wastewaters; utility wastewaters; cooling water blowdown from the Nitric Acid Plant; Sabine River Water; previously tested hydrostatic test wastewaters from Internal Outfall 500; and stormwater from former manufacturing and support areas, and the Veolia demineralized water manufacturing area.
- B. Location - Discharge to the Calcasieu River Clooney Island Loop via local drainage at Latitude 30°13'53", Longitude 93°15'49".
- C. Treatment - treatment of process wastewaters consists of:
  - neutralization
- D. Flow - Continuous Flow 2.09 MGD.
  - \* Specific component waste streams are defined at Appendix A-1.
- E. Receiving waters - Calcasieu River Clooney Island Loop via local drainage
- F. Basin and segment - Calcasieu River Basin, Segment 030301
- G. Effluent Data - The effluent data are contained in Appendix C.

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Outfall 008

- A. Type of wastewater- the discharge of once through non-contact cooling water and de minimis discharges of utility wastewaters.
- B. Location - At the point of discharge prior to where the once through non-contact cooling water discharge enters into the waters of the Calcasieu River Clooney Island Loop and/or prior to mixing with any other waters, Latitude 30°13'54", Longitude 93°16'00".
- C. Treatment - neutralization
- D. Flow - Continuous Flow 0.906 MGD.
- E. Receiving waters - Calcasieu River Clooney Island Loop via local drainage
- F. Basin and segment - Calcasieu River Basin, Segment 030301
- G. Effluent Data - The effluent data are contained in Appendix C.

Existing Outfall 010 (Biological Treatment with a Non-Operational TDI Unit and an Operational TDA Unit) -Interim and Final

- A. Type of wastewater - the discharge of treated process wastewaters from the TDA Plant; TDA Still Bottoms; Hydrazine (Raschig) from Arch Chemical; Biolab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; process and non-process area stormwater; Hydrazine Ketazine wastewaters from Arch Chemical; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; previously monitored/treated sanitary wastewater from Internal Outfall 310; utility wastewaters including, but not limited to demineralized H2O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.
- B. Location - at the point of discharge from T438, prior to discharge into the Calcasieu River at Coon Island Loop and mixing with any other waters, Latitude 30°13'26", Longitude 93°16'29".

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C. Treatment - treatment of process wastewaters consists of:

\*Biological Treatment for discharges from the TDA Plant, TDA Still Bottoms, Oxygen and Nitrogen Manufacturing (Air Products), Sanitary Wastewater, and HYCO Plant I:

- Neutralization
- Equalization
- Activated Sludge
- Settling/Clarification
- Carbon Adsorption (optional)
- Sludge Dewatering

\*Non-Biological Treatment System for discharges from the Hydrazine Raschig and Ketazine Units (ARCH Chemical), TCCA unit (Biolab), HYCO III Plant, Demineralized water (Veolia), Reagent Chemicals, Powerhouse and Utilities, Non-process area stormwater, cooling water blowdown, and utility wastewaters:

- Equalization
- Neutralization
- Chemical Oxidation
- Dechlorination
- Settling/Clarification
- Sludge Dewatering

D. Flow - Continuous, 3.148 MGD

E. Receiving waters - Calcasieu River Coon Island Loop

F. Basin and segment - Calcasieu River Basin, Segment 030301

G. Effluent Data - The effluent data are contained in Appendix C.

Outfall A10 (Non-Biological Treatment with the TDI Unit Non-Operational and the TDA Unit Operational) - Interim and Final

- A. Type of wastewater - the discharge of treated process wastewaters from the TDA Plant; TDA Still Bottoms; Hydrazine (Raschig) from Arch Chemical; Bioloab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; process and non-process area stormwater; Hydrazine Ketazine wastewaters from Arch Chemical; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; previously monitored/treated sanitary wastewater from Internal Outfall 310; utility wastewaters including, but not limited to demineralized H<sub>2</sub>O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.
- B. Location - at the point of discharge from T438, prior to discharge into the Calcasieu River at Coon Island Loop and mixing with any other waters, Latitude 30°13'26", Longitude 93°16'29".
- C. Treatment - treatment of process wastewaters consists of:

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\*Non-Biological Treatment System for discharges from the TDA Plant, TDA Still Bottoms, Oxygen and Nitrogen Manufacturing (Air Products), Sanitary Wastewater, HYCO Plant I:

- Clarification
- pH Adjustment (as required)
- Filtration
- Carbon Beds

\*Non-Biological Treatment System for discharges from the Hydrazine Raschig and Ketazine Units (ARCH Chemical), TCCA unit (Biolab), HYCO III Plant, Demineralized water (Veolia), Reagent Chemicals, Powerhouse and Utilities, Non-process area stormwater, cooling water blowdown, and utility wastewaters:

- Equalization
- Neutralization
- Chemical Oxidation
- Dechlorination
- Settling/Clarification
- Sludge Dewatering

- D. Flow - Continuous, 3.148 MGD
- E. Receiving waters - Calcasieu River Coon Island Loop
- F. Basin and segment - Calcasieu River Basin, Segment 030301
- G. Effluent Data - The effluent data are contained in Appendix C.

Outfall B10 (Non-Biological Treatment with the TDI and TDA Units Both Non-Operational) - Interim and Final

- A. Type of wastewater - the discharge of treated process wastewaters from the Hydrazine (Raschig) from Arch Chemical; Biolab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; non-process area stormwater; Hydrazine Ketazine wastewaters from Arch Chemical; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; previously monitored/treated sanitary wastewater from Internal Outfall 310; utility wastewaters including, but not limited to demineralized H<sub>2</sub>O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.
- B. Location - at the point of discharge from T438, prior to discharge into the Calcasieu River at Coon Island Loop and mixing with any other waters, Latitude 30°13'26", Longitude 93°16'29".
- C. Treatment - treatment of process wastewaters consists of:

\*Non-Biological Treatment System for discharges from the Oxygen and Nitrogen Manufacturing (Air Products), Sanitary Wastewater, HYCO Plant I:

- Clarification
- pH Adjustment (as required)
- Filtration
- Carbon Beds



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\*Non-Biological Treatment System for discharges from the Hydrazine Raschig and Ketazine Units (ARCH Chemical), TCCA unit (Biolab), HYCO III Plant, Demineralized water (Veolia), Reagent Chemicals, Powerhouse and Utilities, Non-process area stormwater, cooling water blowdown, and utility wastewaters:

- Equalization
- Neutralization
- Chemical Oxidation
- Dechlorination
- Settling/Clarification
- Sludge Dewatering

- D. Flow - Continuous, 2.853 MGD
- E. Receiving waters - Calcasieu River Coon Island Loop
- F. Basin and segment - Calcasieu River Basin, Segment 030301
- G. Effluent Data - The effluent data are contained in Appendix C.

Outfall C10 (Biological Treatment with the TDA and TDI Units Both Operational) - Interim and Final

- A. Type of wastewater - the discharge of treated process wastewaters from the TDI Plant, TDI Vent Scrub; TDA Plant; TDA Still Bottoms; Hydrazine (Raschig) from Arch Chemical; Bioloab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; process and non-process area stormwater; previously monitored/treated sanitary wastewater from Internal Outfall 31A; Hydrazine Ketazine wastewaters from Arch Chemical; TDI Incinerator wastewater; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; and utility wastewaters including, but not limited to demineralized H<sub>2</sub>O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.
- B. Location - at the point of discharge from T438, prior to discharge into the Calcasieu River at Coon Island Loop and mixing with any other waters, Latitude 30°13'26", Longitude 93°16'29".
- C. Treatment - treatment of process wastewaters consists of:
  - \*Biological Treatment System for discharges from the TDI Plant, TDA Plant, TDA Still Bottoms, Oxygen and Nitrogen Manufacturing (Air Products), Sanitary Wastewater, and HYCO Plant I:
    - Neutralization
    - Equalization
    - Activated Sludge
    - Settling/Clarification
    - Carbon Adsorption (optional)
    - Sludge Dewatering

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\*Non-Biological Treatment System for discharges from the Hydrazine Raschig and Ketazine Units (ARCH Chemical), TCCA unit (Biolab), HYCO III Plant, Demineralized water (Veolia), Reagent Chemicals, Powerhouse and Utilities, Non-process area stormwater, cooling water blowdown, and utility wastewaters:

- Equalization
- Neutralization
- Chemical Oxidation
- Dechlorination
- Settling/Clarification
- Sludge Dewatering

\*OCPSF Incinerator Blowdown discharges:

- Neutralization
- Dechlorination

- D. Flow - Continuous, 3.799 MGD
- E. Receiving waters - Calcasieu River Coon Island Loop
- F. Basin and segment - Calcasieu River Basin, Segment 030301
- G. Effluent Data - The effluent data are contained in Appendix C.

Proposed New Location Outfall D10 (Biological Treatment with the TDI Unit Non-Operational and the TDA Unit Operational) - Interim and Final

- A. Type of wastewater - the discharge of treated process wastewaters from the TDA Plant; TDA Still Bottoms; Hydrazine (Raschig) from Arch Chemical; Biolab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; process and non-process area stormwater; Hydrazine Ketazine wastewaters from Arch Chemical; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; previously monitored/treated sanitary wastewater from Internal Outfall 310; utility wastewaters including, but not limited to demineralized H2O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.
- B. Location - at the point of discharge from T438, prior to discharge into the Calcasieu River Main Stem and mixing with any other waters, Latitude 30°12'26.4", Longitude 93°16'18.1".
- C. Treatment - treatment of process wastewaters consists of:

\*Biological Treatment System for discharges from the TDA Plant, TDA Still Bottoms, Oxygen and Nitrogen Manufacturing (Air Products), Sanitary Wastewater, and HYCO Plant I:

- Neutralization
- Equalization
- Activated Sludge
- Settling/Clarification
- Carbon Adsorption (optional)
- Sludge Dewatering

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\*Non-Biological Treatment System for discharges from the Hydrazine Raschig and Ketazine Units (ARCH Chemical), TCCA unit (Biolab), HYCO III Plant, Demineralized water (Veolia), Reagent Chemicals, Powerhouse and Utilities, Non-process area stormwater, cooling water blowdown, and utility wastewaters:

- Equalization
- Neutralization
- Chemical Oxidation
- Dechlorination
- Settling/Clarification
- Sludge Dewatering

- D. Flow - Continuous, 3.148 MGD
- E. Receiving waters - Calcasieu River Main Stem via local drainage
- F. Basin and segment - Calcasieu River Basin, Segment 030301
- G. Effluent Data - The effluent data are contained in Appendix C.

Proposed New Location Outfall E10 (Non-Biological Treatment with the TDI Unit Non-Operational and the TDA Unit Operational) - Interim and Final

- A. Type of wastewater - the discharge of treated process wastewaters from the TDA Plant; TDA Still Bottoms; Hydrazine (Raschig) from Arch Chemical; Bioloab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; process and non-process area stormwater; Hydrazine Ketazine wastewaters from Arch Chemical; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; previously monitored/treated sanitary wastewater from Internal Outfall 310; utility wastewaters including, but not limited to demineralized H<sub>2</sub>O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.
- B. Location - at the point of discharge from T438, prior to discharge into the Calcasieu River Main Stem and mixing with any other waters, Latitude 30°12'26.4", Longitude 93°16'18.1".
- C. Treatment - treatment of process wastewaters consists of:
  - \*Non-Biological Treatment System for discharges from the TDA Plant, TDA Still Bottoms, Oxygen and Nitrogen Manufacturing (Air Products), Sanitary Wastewater, HYCO Plant I:
    - Clarification
    - pH Adjustment (as required)
    - Filtration
    - Carbon Beds

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\*Non-Biological Treatment System for discharges from the Hydrazine Raschig and Ketazine Units (ARCH Chemical), TCCA unit (Biolab), HYCO III Plant, Demineralized water (Veolia), Reagent Chemicals, Powerhouse and Utilities, Non-process area stormwater, cooling water blowdown, and utility wastewaters:

- Equalization
- Neutralization
- Chemical Oxidation
- Dechlorination
- Settling/Clarification
- Sludge Dewatering

- D. Flow - Continuous, 3.148 MGD
- E. Receiving waters - Calcasieu River Main Stem via local drainage
- F. Basin and segment - Calcasieu River Basin, Segment 030301
- G. Effluent Data - The effluent data are contained in Appendix C.

Proposed New Location Outfall F10 (Non-Biological Treatment with the TDI and TDA Units Both Non-Operational) - Interim and Final

A Type of wastewater - the discharge of treated process wastewaters from the Hydrazine (Raschig) from Arch Chemical; Biolab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; non-process area stormwater; Hydrazine Ketazine wastewaters from Arch Chemical; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; previously monitored/treated sanitary wastewater from Internal Outfall 310; utility wastewaters including, but not limited to demineralized H<sub>2</sub>O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.

B. Location - at the point of discharge from T438, prior to discharge into the Calcasieu River Main Stem and mixing with any other waters, Latitude 30°12'26.4", Longitude 93°16'18.1".

C. Treatment - treatment of process wastewaters consists of:

\*Non-Biological Treatment System for discharges from the Oxygen and Nitrogen Manufacturing (Air Products), Sanitary Wastewater, HYCO Plant I:

- Clarification
- pH Adjustment (as required)
- Filtration
- Carbon Beds

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\*Non-Biological Treatment System for the Hydrazine Raschig and Ketazine Units (ARCH Chemical), TCCA unit (Biolab), HYCO III Plant, Demineralized water (Veolia), Reagent Chemicals, Powerhouse and Utilities, Non-process area stormwater, cooling water blowdown, and utility wastewaters:

- Equalization
- Neutralization
- Chemical Oxidation
- Dechlorination
- Settling/Clarification
- Sludge Dewatering

- D. Flow - Continuous, 2.853 MGD
- E. Receiving waters - Calcasieu River Main Stem via local drainage
- F. Basin and segment - Calcasieu River Basin, Segment 030301
- G. Effluent Data - The effluent data are contained in Appendix C.

Proposed New Location Outfall G10 (Biological Treatment with the TDA and TDI Units Both Operational) - Interim and Final

- A Type of wastewater - the discharge of treated process wastewaters from the TDI Plant, TDI Vent Scrub; TDA Plant; TDA Still Bottoms; Hydrazine (Raschig) from Arch Chemical; Bioloab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; process and non-process area stormwater; previously monitored/treated sanitary wastewater from Internal Outfall 31A; Hydrazine Ketazine wastewaters from Arch Chemical; TDI Incinerator wastewater; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; and utility wastewaters including, but not limited to demineralized H2O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal 110 and 210.
- B. Location - at the point of discharge from T438, prior to discharge into the Calcasieu River Main Stem and mixing with any other waters, Latitude 30°12'26.4", Longitude 93°16'18.1".
- C. Treatment - treatment of process wastewaters consists of:

\*Biological Treatment System for discharges from the TDI Plant, TDA Plant, TDA Still Bottoms, Oxygen and Nitrogen Manufacturing (Air Products), Sanitary Wastewater, and HYCO Plant I:

- Neutralization
- Equalization
- Activated Sludge
- Settling/Clarification
- Carbon Adsorption (optional)
- Sludge Dewatering

\*Non-Biological Treatment System for discharges from the Hydrazine Raschig and Ketazine Units (ARCH Chemical), TCCA unit (Biolab), HYCO III Plant, Demineralized water (Veolia),

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Reagent Chemicals, Powerhouse and Utilities, Non-process area stormwater, cooling water blowdown, and utility wastewaters:

- Equalization
- Neutralization
- Chemical Oxidation
- Dechlorination
- Settling/Clarification
- Sludge Dewatering

\*OCPSF Incinerator Blowdown discharges:

- Neutralization
- Dechlorination

- D. Flow - Continuous, 3.799 MGD
- E. Receiving waters - Calcasieu River Main Stem via local drainage
- F. Basin and segment - Calcasieu River Basin, Segment 030301
- G. Effluent Data - The effluent data are contained in Appendix C.

Outfall 110

- A. Type of wastewater - the discharge of wastewaters from the HYCO Plant I.
- B. Location - at the point of discharge from HYCO Plant I, prior to discharge into the Calcasieu River at Coon Island Loop and mixing with any other waters via Final Outfall 010, A10, B10, or C10 or the Main Stem of the Calcasieu River through Final Outfall D10, G10, E10, or F10 at Latitude 30°14'01", Longitude 93°16'12".
- C. Treatment - none
- D. Flow - Continuous, 0.016 MGD
- E. Receiving waters - Calcasieu River Coon Island Loop via Final Outfall 010, A10, B10, or C10 or the Main Stem of the Calcasieu River via Final Outfall D10, E10, F10, or G10 (after outfall relocation)
- F. Basin and segment - Calcasieu River Basin, Segment 030301

Outfall 210

- A. Type of wastewater - the discharge of wastewaters from the HYCO Plant III.
- B. Location - at the point of discharge from HYCO Plant III, prior to discharge into the Calcasieu River at Coon Island Loop and mixing with any other waters via Final Outfall 010, A10, B10, or C10 or the Main Stem of the Calcasieu River through Final Outfall D10, G10, E10, or F10 at Latitude 30°14'02", Longitude 93°16'09".
- C. Treatment - none

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- D. Flow - Continuous, 0.014 MGD
- E. Receiving waters -Calcasieu River Coon Island Loop via Final Outfall 010, A10, B10, or C10 or the Main Stem of the Calcasieu River via Final Outfall D10, E10, F10, or G10 (after outfall relocation)
- F. Basin and segment -Calcasieu River Basin, Segment 030301

Outfall 310 (TDI and TDA Units are Non-Operational or the TDI Unit is Non-Operational and the TDA Unit is Operational)

- A. Type of wastewater - the discharge of treated sanitary wastewater.
- B. Location - at the point of discharge from the sanitary treatment facility, prior to discharge into the Calcasieu River at Coon Island Loop and mixing with any other waters via Final Outfall 010, A10, or B10 or the Main Stem of the Calcasieu River through Final Outfall D10, E10, or F10 at Latitude 30°14'02", Longitude 93°16'09".
- C. Treatment - sewage treatment plant
- D. Flow - 0.003 MGD estimate flow
- E. Receiving waters - Calcasieu River Coon Island Loop via Final Outfall 010, A10, or B10 or the Main Stem of the Calcasieu River via Final Outfall D10, E10, or F10 (after outfall relocation)
- F. Basin and segment -Calcasieu River Basin, Segment 030301

Outfall 31A (TDI and TDA Units are Both Operational)

- A. Type of wastewater - the discharge of treated sanitary wastewater.
- B. Location - at the point of discharge from the sanitary treatment facility, prior to discharge into the Calcasieu River at Coon Island Loop and mixing with any other waters via Final Outfall C10 or the Main Stem of the Calcasieu River through Final Outfall G10 at Latitude 30°14'02", Longitude 93°16'09".
- C. Treatment - mechanical treatment plant
- D. Flow - 0.032 MGD estimated flow
- E. Receiving waters -Calcasieu River Coon Island Loop via Final Outfall C10 or the Main Stem of the Calcasieu River via Final Outfall G10 (after outfall relocation)
- F. Basin and segment -Calcasieu River Basin, Segment 030301

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Outfall 019

- A. Type of wastewater - low contamination potential stormwater runoff from manufacturing and support areas; de minimis non-process area utility wastewaters including, but not limited to steam condensate from steam traps, supply well head leakage, and fire monitor leakage; and previously monitored hydrostatic test wastewater(s) from Internal Outfall 500.
- B. Location - at the point of discharge into the drainage ditch on the northeast corner, prior to commingling with any other wastewaters, Latitude 30°14'07", Longitude 93°15'29".
- C. Treatment - Settling/Clarification
- D. Flow - Intermittent
- E. Receiving waters - Calcasieu River Clooney Island Loop via local drainage
- F. Basin and segment - Calcasieu River Basin, Segment 030301

Outfall 020

- A. Type of wastewater - the discharge of stormwater runoff from manufacturing and support areas and former Outfall 016; previously monitored hydrostatic test wastewater(s) from Internal Outfall 500; and utility wastewaters including, but not limited to steam condensate from steam traps, supply well head leakage, and fire monitor leakage.
- B. Location - Discharge to the Calcasieu River Clooney Island Loop via local drainage, Latitude 30°13'53", Longitude 93°15'42".
- C. Treatment - Settling/Clarification
- D. Flow - Intermittent
- E. Receiving waters - Calcasieu River Clooney Island Loop via local drainage
- F. Basin and segment - Calcasieu River Basin, Segment 030301

Outfall 022

- A. Type of wastewater - low contamination potential stormwater runoff from manufacturing and support areas; intermittent overflow from the TDI Incinerator emergency fire deluge system; de minimis quantities of non-process area utility wastewaters including, but not limited to steam condensate from steam traps, supply well head leakage, and fire monitor leakage; and previously monitored hydrostatic test wastewaters from Internal Outfall 500.
- B. Location - at the point of discharge into the plant slip west of the Shell Barge Dock, prior to commingling with any other wastewaters, Latitude 30°13'53", Longitude 93°16'09".
- C. Treatment - None
- D. Flow - Intermittent



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- E. Receiving waters - Calcasieu River Clooney Island Loop via local drainage
- F. Basin and segment - Calcasieu River Basin, Segment 030301

Outfall 025

- A. Type of wastewater - the discharge of low contamination potential stormwater runoff from manufacturing and support areas; de minimis quantities of non-process area utility wastewaters including, but not limited to steam condensate from steam traps, supply well head leakage, and fire monitor leakage; and previously monitored hydrostatic test wastewaters from Internal Outfall 500.
- B. Location - at the point of discharge prior to entering Bayou Verdine and/or commingling with any other wastewaters, Latitude 30°14'07", Longitude 93°16'45".
- C. Treatment - Settling/Clarification
- D. Flow - Intermittent
- E. Receiving waters - Bayou Verdine
- F. Basin and segment - Calcasieu River Basin, Segment 030306

Outfall 026

- A. Type of wastewater - the discharge of stormwater runoff from manufacturing and support areas; previously monitored hydrostatic test wastewater(s) from Internal Outfall 500; and utility wastewaters including, but not limited to steam condensate from steam traps, supply well head leakage, and fire monitor leakage.
- B. Location - at the point of discharge prior to entering Bayou Verdine and/or commingling with any other wastewaters, Latitude 30°14'07", Longitude 93°16'45".
- C. Treatment - Settling/Clarification
- D. Flow - Intermittent
- E. Receiving waters - Bayou Verdine
- F. Basin and segment - Calcasieu River Basin, Segment 030306

Outfall 029

- A. Type of wastewater - the discharge of low contamination potential stormwater runoff from the east side of the closed West Pond, wastewater treatment plant area, and sheet flow from the access road; periodic diversion of wastewater during preventative maintenance activities for sumps X-303 (Powerhouse boiler blowdown and oil sump wastewaters and pilot plant) and X-307 (cooling water blowdown from TDI and TDA); non-process area utility wastewaters including, but not limited to steam condensate from steam traps, supply well head leakage, and fire monitor leakage; and a dilute mixture of wastewater and stormwater from sump X-201 (to be used during periods of heavy rain or unusual hydraulics conditions,

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after first flush of a quarter inch of rainfall has been collected and pumped to the non-biological treatment system); and previously monitored hydrostatic test waste water from Internal Outfall 500.

- B. Location - at the point of discharge into the plant slip prior to commingling with any other wastewaters, Latitude 30°13'54", Longitude 93°16'19".
- C. Treatment - None
- D. Flow - Intermittent
- E. Receiving waters - Calcasieu River Clooney Island Loop via local drainage
- F. Basin and segment - Calcasieu River Basin, Segment 030301

Internal Outfall 500

- A. Type of wastewater - hydrostatic test wastewaters.
- B. Location - at the point of discharge from the pipe or vessel being tested. May be discharged through any final outfall.
- C. Treatment - None
- D. Flow - Intermittent
- E. Receiving waters - Clooney Island Loop (Outfalls 001, 019, 020, and 022) and Bayou Verdine (Outfalls 025 and 026).
- F. Basin and segment - Calcasieu River Basin, Segment 030301

**VIII. Proposed Permit Limits:**

The specific effluent limitations and/or conditions will be found in the draft permit. Development and calculation of permit limits are detailed in Appendix A and associated appendices.

**Summary of Proposed Changes From the Current Permit:**

1. Outfall 001 - Total Chromium and Total Zinc have been removed from this permit due to the cessation of their use as cooling water additives and fertilizer production. The Permittee also requested to remove temperature and Vanadium as a result of the cessation of fertilizer production. This request has been granted. Other parameters and conditions that were requested to be removed are Ammonia (as N), Organic-Nitrogen, and Nitrate-Nitrogen. This request was partially granted based on lab data submitted in the March 2005 application addendum submittal. Lyondell did a reasonable potential screening for Ammonia (as N), Organic-Nitrogen, and Nitrate-Nitrogen using the following BPJ nitrogen concentrations for stormwater: Ammonia (as N) and Organic-Nitrogen were screened using a 10 mg/L maximum 30-day average and 30 mg/L daily maximum, Nitrate-Nitrogen was screened using a 5 mg/L maximum 30-day average and 15 mg/L daily maximum. The stormwater values used for sampling were consistent with BAT limits established for similar discharges in Lyondell's previous permit.

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The observed maximum 30-day average and daily maximum concentrations of Ammonia (as N) and Organic-Nitrogen were well below the 10 mg/L and 30 mg/L concentrations for screening. Based on this information, it has been determined that there is no reasonable potential to discharge these pollutants, therefore, no requirements were placed on this outfall for Ammonia (as N) and Organic-Nitrogen.

The observed maximum 30-day average and daily maximum concentrations of Nitrate-Nitrogen reported were 7.56 mg/L and 66.90 mg/L, which are above the 5 mg/L and 15 mg/L concentrations for screening. It has been determined that there is reasonable potential for discharge of Nitrate-Nitrogen, therefore limitations were established for this parameter (See Appendix A-1).

2. Outfall 001 - A Lyondell request to delete biomonitoring requirements from this outfall due to cessation of fertilizer production has been denied based on a recommendation by the LDEQ Toxicity Section (see Appendix E).
3. Outfall 001 - Brine Wastewater from Olin's Hackberry Operation are no longer managed at Lyondell Chemical Company. Therefore, the requirements at 40 CFR 415, Subpart D are no longer applicable to this outfall and as a result, chlorides reporting has been removed.
4. Outfall 001 - A Lyondell request to remove Total Residual Chlorine (TRC) from this outfall has been denied based on lab data presented to LDEQ in the March 2005 application addendum. The results reported were 0.125 mg/L maximum 30-day average and 0.620 mg/L daily maximum, and covered the period of January 1, 2003 through February 21, 2005. The 30 day maximum value exceeded the TRC concentrations calculated in the November 10, 1992 NPDES permit of 0.5 mg/L, therefore, TRC limitations will remain in the permit. The limitations established are 0.9 mg/L maximum 30-day average and 2.1 mg/L daily maximum (See Appendix A-1).
5. Outfall 001 - Lyondell has requested a reduction in the measurement frequency for Oil & Grease, TRC, and TSS. Based on compliance history in accordance with the requirements stated in the USEPA Memorandum "Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies," the measurement frequency for Oil & Grease has been changed from 1/week to 1/ 2 months and the frequencies for TRC and TSS have been changed from 3/week to 1/week.
6. Outfall 008 - A Lyondell request to remove biomonitoring requirements from this outfall has been denied based upon a recommendation by the LDEQ Toxicity Section (see Appendix E).
7. Outfall 010 - Lyondell requests removal of Total Phosphorus since Lyondell no longer produces Polyol Thermolin™ T-101. This request has been granted based on lab data presented to LDEQ in the March 2005 application addendum.
8. Outfalls 010, A10, B10, C10, D10, E10, F10, and G10 - Lyondell requests removal of the parameters Ammonia (as N), Organic-Nitrogen, & Nitrate-Nitrogen due to cessation of fertilizer production. This request has been denied based on lab data submitted in the March 2005 application submittal. Lyondell screened Ammonia (as N), Organic-Nitrogen, and Nitrate-Nitrogen using the following BPJ nitrogen concentrations for stormwater: Ammonia (as N) and Organic-Nitrogen were screened using a 10 mg/L maximum 30-day average and 30 mg/L daily maximum, Nitrate-Nitrogen was screened using a 5 mg/L maximum 30-day

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average and 15 mg/L daily maximum. The stormwater values used for sampling were consistent with BAT limits established for similar discharges in Lyondell's previous permit.

The observed maximum 30-day average and daily maximum concentrations of Ammonia (as N), Organic-Nitrogen, and Nitrate-Nitrogen were above the concentrations on all accounts. It has been determined that there is reasonable potential for discharge of Ammonia (as N), Organic-Nitrogen, and Nitrate-Nitrogen, therefore, limitations were established for these parameters (See Appendix A and associated appendices).

Ammonia (as N) limitations have been established by Best Practical Judgement (BPJ) using operations data supplied by Lyondell spanning from January 2, 1996 through December 30, 2004. Limitations established fall under two scenarios. Scenario one requires a representative sample taken during operating conditions 1-4 (condition 1-no hydrazine production underway, condition 2-only ketazine production underway, condition 3- unsymmetrical dimethyl hydrazine [UDMH] and ketazine production underway, and condition 4-anhydrous hydrazine [AH] production underway). Ammonia (as N) limitations for Scenario 1 are 495 lbs/day monthly average and 743 lbs/day daily maximum. Scenario 2 requires a representative sample taken during operation of condition 5 (monomethyl hydrazine [MMH] and ketazine production underway). Ammonia (as N) limitations for Scenario 1 are 1571 lbs/day monthly average and 2907 lbs/day daily maximum.

Organic-Nitrogen and Nitrate-Nitrogen were also established based on BPJ using operations data supplied by Lyondell spanning from January 2, 1996 through December 30, 2004. Lab data did not show the same variability for these parameters as in the case of Ammonia (as N), therefore the limitations are the same in all operating conditions (condition 1-no hydrazine production underway, condition 2-only ketazine production underway, condition 3- unsymmetrical dimethyl hydrazine [UDMH] and ketazine production underway, condition 4-anhydrous hydrazine [AH] production underway, and condition 5 where monomethyl hydrazine [MMH] and ketazine production are underway). Organic-Nitrogen limitations are 938 lbs/day monthly average and 1376 lbs/day daily maximum. Nitrate-Nitrogen limitations are 210 lbs/day monthly average and 299 lbs/day daily maximum.

9. Outfall 010 - Total Chromium and Total Zinc have been removed due to the cessation of their use as cooling water additives and fertilizer production.
10. Outfall 010 - Lyondell request removal of the parameter Total Chlorinated Hydrocarbons (TOX) because of similar parameters already being tested under this outfall. This request has been granted.
11. Outfall 010, A10, B10, C10, D10, E10, F10, and G10 - Lyondell has requested a reduction in sampling frequency for the following parameters: BOD<sub>5</sub>, TSS, Oil & Grease, Total Residual Chlorine, Carbon Tetrachloride, Chlorobenzene, Chloroform, 1,2-Dichloroethane, 1,2-Dichloropropane, Methyl Chloride, 1,1,1-Trichloroethane, Vinyl Chloride, 2,4-Dichlorophenol, 2,4-Dimethylphenol, 2,4-Dinitrotoluene, and Total Nickel. Based on compliance history in accordance with the requirements stated in the USEPA Memorandum "Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies," the measurement frequencies for Total Residual Chlorine, BOD<sub>5</sub> and TSS have been reduced from 3/week to 1/week. Oil & Grease, Carbon Tetrachloride, Chlorobenzene, Chloroform, 1,2-Dichloroethane, 1,2-Dichloropropane, Methyl Chloride, 1,1,1-Trichloroethane, Vinyl Chloride, 2,4-Dichlorophenol, 2,4-Dimethylphenol, 2,4-Dinitrotoluene, and Total Nickel have been reduced from 1/week to 1/ 2 months.

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12. Outfall 010 - A Lyondell request to retain the previous biomonitoring dilution series prior to relocation of Outfall 010 has been denied. The dilution series assigned in previous permit, effective November 10, 1992, was calculated using a discharge flow of 13.76 MGD and a critical flow of 1657.33 cfs, which represents conditions that are extremely outdated. According to new information on the receiving stream and Lyondell's application, the discharge flow is 2.853 MGD to 3.799 MGD and critical flow of Coon Island Loop is 61.21 cfs. It appears the previous dilution series was erroneously calculated using data from the Main Channel of the Calcasieu instead of Coon Island Loop. LDEQ's purpose is to follow the Clean Water Act to ensure the protection of the waters of our state by developing permit requirements that are reflective of current operations. Due to the most recent data on the receiving stream, the previous dilution series can not be retained in this permit.
13. Outfall 010 (Interim and Final) - Monitoring frequencies for 1,3-Dichloropropylene, Hexachlorobenzene, and Hexachlorobutadiene have been increased from 1/year to 1/ 6 months based on these parameters being water quality limited. Frequencies for Total Nickel and Carbon Tetrachloride (other non-TMDL water quality limited parameters) were established at 1/ 2 months.
14. Outfall 010, A10, B10, C10, D10, E10, F10, and G10 - Lyondell Chemical Company is proposing to relocate the discharge point from its current location in Coon Island Loop (Outfalls 010, and Proposed Outfalls A10, B10, and C10) to the Main Stem of the Calcasieu River (Proposed Outfalls D10, E10, F10, and G10) due to new limitations being imposed as required by the Upper Calcasieu Estuary TMDL issued in the Federal Register on June 13, 2002. Since this discharge will remain in the same subsegment, 030301, all conditions of the Upper Calcasieu Estuary TMDL will remain unchanged. Limitations have been calculated using the critical flow, harmonic mean, receiving water hardness and TSS data for the existing and proposed outfall locations (See Appendix B and associated appendices).

Outfalls 010, A10, B10, C10, D10, E10, F10, and G10 (Interim) and (Final) Schedules - Outfall 010 is an existing outfall. Outfalls A10, B10, and C10 are the same outfall as 010, but are given different outfall designators due to multiple operational phases and different limitations assigned to each operational phase. Outfall D10 is the new relocated outfall. Outfalls E10, F10, and G10 are the same outfall as D10, but are given different outfall designators due to multiple operational phases and different limitations assigned to each operational phase. This will aide LDEQ's Compliance Group and ensure that the correct Discharge Monitoring Reports (DMRs) are submitted to this Office. Currently, this facility has 16 scenarios for discharge limitations under Outfalls 010, A10, B10, C10, D10, E10, F10, and G10. These are as follows:

Outfall 010 (Interim) - This schedule will be used in the **current outfall location**. It covers the period from the effective date of the permit (while the plant using the biological treatment option) with the TDI Unit non-operational and the TDA Unit operational until the startup another operational phase, **or** the outfall relocation to the Main Channel of the Calcasieu, **or** until June 12, 2008. The purpose of this schedule is to account for TMDL reporting before final TMDL limitations and the compliance schedule for non-TMDL water quality based limitations at the current outfall location (while using the biological treatment option) with the TDI Unit non-operational and the TDA Unit operational (See Appendix F).

Outfall 010 (Final) - This schedule will be used in the **current outfall location**. It covers the period starting on June 13, 2008 (while plant is using biological

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treatment) and the TDI Unit is non-operational and the TDA Unit is operational, until the relocation of this outfall to the Main Channel of the Calcasieu River, **or** the startup of other operational phases, **or** the expiration date. The purpose of this schedule is to account for final TMDL and non-TMDL water quality based limitations at the current outfall location (while using the biological treatment option) with the TDI Unit non-operational and TDA Unit operational (See Appendix F).

Outfall A10 (Interim) - This schedule will be used in the **current outfall location**. It covers the period from the effective date of the permit (while plant is using non-biological treatment) where the TDI Unit is non-operational and the TDA Unit is operational, until the startup another operational phase, **or** the outfall relocation to the Main Channel of the Calcasieu, **or** until June 12, 2008. The purpose of this schedule is to account for TMDL reporting before final TMDL limitations and the compliance schedule for non-TMDL water quality based limitations at the current outfall location (while plant is using non-biological treatment) where the TDI Unit is non-operational and the TDA Unit is operational (See Appendix F).

Outfall A10 (Final) - This schedule will be used in the **current outfall location**. It covers the period starting on June 13, 2008 (while plant is using non-biological treatment) where the TDI Unit is non-operational and the TDA Unit is operational, until the relocation of this outfall to the Main Channel of the Calcasieu River, **or** the startup of other operational phases, **or** the expiration date. The purpose of this schedule is to account for final TMDL and non-TMDL water quality based limitations at the current outfall location (while plant is using non-biological treatment) where the TDI Unit is non-operational and the TDA Unit is operational (See Appendix F).

Outfall B10 (Interim) - This schedule will be used in the **current outfall location**. It covers the period from the effective date of the permit (while plant is using non-biological treatment) where the TDA and TDI Units are both non-operational, until the startup another operational phase, **or** the outfall relocation to the Main Channel of the Calcasieu, **or** until June 12, 2008. The purpose of this schedule is to account for TMDL reporting before final TMDL limitations and the compliance schedule for non-TMDL water quality based limitations at the current outfall location (while plant is using non-biological treatment) where the TDA and TDI Units are both non-operational (See Appendix F).

Outfall B10 (Final) - This schedule will be used in the **current outfall location**. It covers the period starting on June 13, 2008 (while plant is using non-biological treatment) where the TDA and TDI Units are both non-operational, until the relocation of this outfall to the Main Channel of the Calcasieu River, **or** the startup of other operational phases, **or** the expiration date. The purpose of this schedule is to account for final TMDL and non-TMDL water quality based limitations at the current outfall location (while plant is using non-biological treatment) where the TDA and TDI Units are both non-operational (See Appendix F).

Outfall C10 (Interim) - This schedule will be used in the **current outfall location**. It covers the period from the effective date of the permit (while plant is using the biological treatment option) where the TDI and TDA Units are both operational, until the startup another operational phase, **or** the outfall relocation to the Main Channel of the Calcasieu, **or** until June 12, 2008. The purpose of this schedule is to account for TMDL reporting before final TMDL limitations and the compliance schedule for

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non-TMDL water quality based limitations at the current outfall location (while plant is using the biological treatment option) where the TDI and TDA Units are both operational (See Appendix F).

Outfall C10 (Final) - This schedule will be used in the **current outfall location**. It covers the period starting on June 13, 2008 (while plant is using the biological treatment option) where the TDI and TDA Units are both operational, until the relocation of this outfall to the Main Channel of the Calcasieu River, **or** the startup of other operational phases, **or** the expiration date. The purpose of this schedule is to account for final TMDL and non-TMDL water quality based limitations at the current outfall location (while plant is using the biological treatment option) where the TDI and TDA Units are both operational (See Appendix F).

Outfall D10 (Interim) - This schedule will be used for the **relocated outfall**. It covers the period right after the relocation of Outfall 010, A10, B10, or C10 into the Main Channel of the Calcasieu River (while plant is using biological treatment) and the TDI Unit is non-operational and the TDA Unit is operational, until June 12, 2008, **or** until the plant moves into other operational phase. The purpose of this schedule is to account TMDL reporting before final TMDL limitations and the compliance schedule for non-TMDL water quality based limitations at the new outfall location (while plant is using biological treatment) and the TDI Unit is non-operational and the TDA Unit is operational (See Appendix F).

Outfall D10 (Final) - This schedule will be used for the **relocated outfall**. It covers the period from June 13, 2008, after the relocation of Outfall 010, A10, B10, or C10 into the Main Channel of the Calcasieu River (while plant is using biological treatment) and the TDI Unit is non-operational and the TDA Unit is operational, until the startup of another operational phase **or** permit expiration date. The purpose of this schedule is to account for final TMDL limitations and non-TMDL water quality based limitations at the new outfall location (while plant is using biological treatment) and the TDI Unit is non-operational and the TDA Unit is operational (See Appendix F).

Outfall E10 (Interim) - This schedule will be used for the **relocated outfall**. It covers the period right after the relocation of Outfall 010, A10, B10, or C10 into the Main Channel of the Calcasieu River (while plant is using non-biological treatment) and the TDI Unit is non-operational and the TDA Unit is operational, until June 12, 2008, **or** until the plant moves into other operational phase. The purpose of this schedule is to account TMDL reporting before final TMDL limitations and the compliance schedule for non-TMDL water quality based limitations at the new outfall location (while plant is using non-biological treatment) and the TDI Unit is non-operational and the TDA Unit is operational (See Appendix F).

Outfall E10 (Final) - This schedule will be used for the **relocated outfall**. It covers the period from June 13, 2008, after the relocation of Outfall 010, A10, B10, or C10 into the Main Channel of the Calcasieu River (while plant is using non-biological treatment) and the TDI Unit is non-operational and the TDA Unit is operational, until the startup of another operational phase **or** permit expiration date. The purpose of this schedule is to account for final TMDL limitations and non-TMDL water quality based limitations at the new outfall location (while plant is using non-biological

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treatment) and the TDI Unit is non-operational and the TDA Unit is operational (See Appendix F).

Outfall F10 (Interim) - This schedule will be used for the **relocated outfall**. It covers the period right after the relocation of Outfall 010, A10, B10, or C10 into the Main Channel of the Calcasieu River (while plant is using non-biological treatment) and the TDA and TDI Units are both non-operational, until June 12, 2008, **or** until the plant moves into other operational phase. The purpose of this schedule is to account TMDL reporting before final TMDL limitations and the compliance schedule for non-TMDL water quality based limitations at the new outfall location (while plant is using non-biological treatment) and the TDA and TDI Units are both non-operational (See Appendix F).

Outfall F10 (Final) - This schedule will be used for the **relocated outfall**. It covers the period from June 13, 2008, after the relocation of Outfall 010, A10, B10, or C10 into the Main Channel of the Calcasieu River (while plant is using non-biological treatment) and the TDA and TDI Units are both non-operational, until the startup of another operational phase **or** permit expiration date. The purpose of this schedule is to account for final TMDL limitations and non-TMDL water quality based limitations at the new outfall location (while plant is using non-biological treatment) and the TDA and TDI Units are both non-operational (See Appendix F).

Outfall G10 (Interim) - This schedule will be used for the **relocated outfall**. It covers the period right after the relocation of Outfall 010, A10, B10, or C10 into the Main Channel of the Calcasieu River (while the plant is using biological treatment) and the TDA and TDI Units are both operational, until June 12, 2008, **or** until the plant moves into other operational phase. The purpose of this schedule is to account TMDL reporting before final TMDL limitations and the compliance schedule for non-TMDL water quality based limitations at the new outfall location (while the plant is using biological treatment) and the TDA and TDI Units are both operational (See Appendix F).

Outfall G10 (Final) - This schedule will be used for the **relocated outfall**. It covers the period from June 13, 2008, after the relocation of Outfall 010, A10, B10, or C10 into the Main Channel of the Calcasieu River (while the plant is using biological treatment) and the TDA and TDI Units are operational, until the startup of another operational phase **or** permit expiration date. The purpose of this schedule is to account for final TMDL limitations and non-TMDL water quality based limitations at the new outfall location (while the plant is using biological treatment) and the TDA and TDI Units are operational (See Appendix F).

**Please Note:** Only **ONE** of these outfalls will be discharging at any given time. Lyondell will be required to submit proper notification to this Office and the Office of Environmental Compliance prior to changing the operational phase/outfall designation. Also, any of the schedules above may be skipped depending on the situation. There are a number of combinations that could occur.

For instance, if Lyondell does not relocate Outfall 010 within this permitting cycle, they shall use the schedules for Outfall 010 (Interim) and Outfall 010 (Final), Outfall A10 (Interim) and Outfall A10 (Final), Outfall B10 (Interim) and Outfall B10 (Final), **or** Outfall C10 (Interim) and Outfall C10 (Final) for the life of the permit. Outfall 010 (Interim), A10 (Interim), B10



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(Interim), or C10 (Interim) would be effective immediately and would expire on June 12, 2008. At this time, they would begin the schedule for Outfall 010 (Final), Outfall A10 (Final), Outfall B10 (Final), **or** Outfall C10 (Final).

If Lyondell relocates the outfall prior to June 12, 2008, they will use the schedule for Outfall 010 (Interim), A10 (Interim), B10 (Interim), or C10 (Interim) until the relocation occurs, then they would operate under the Outfall D10 (Interim), Outfall E10 (Interim), Outfall F10 (Interim), **or** Outfall G10 (Interim) schedule. In this scenario, they would move into Outfall D10 (Final), E10 (Final), F10 (Final), or G10 (Final) on June 13, 2008.

15. Outfalls 010 (Interim), A10 (Interim), B10 (Interim), C10 (Interim), D10 (Interim), E10 (Interim), F10 (Interim), and G10 (Interim) - Monthly average and Daily maximum mass limits for Benzo(a)anthracene and Benzo(a)pyrene have been set as interim limits due to the Upper Calcasieu Estuary TMDLs issued in the Federal Register on June 13, 2002. Interim effluent limits are proposed to commence on the effective date of the permit and expire on June 12, 2008.
16. Outfalls 010 (Interim), A10 (Interim), B10 (Interim), C10 (Interim), D10 (Interim), E10 (Interim), F10 (Interim), and G10 (Interim) - The parameters Total Copper and Total Mercury have been added as per the Upper Calcasieu Estuary TMDLs issued in the Federal Register on June 13, 2002. Interim requirements to monitor and report are proposed to commence on the effective date of the permit and expire on June 12, 2008.
17. Outfalls 010 (Interim), A10 (Interim), B10 (Interim), and C10 (Interim), D10 (Interim), E10 (Interim), F10 (Interim), and G10 (Interim) - A compliance schedule has been included to allow Lyondell Chemical Company time to complete the proposed outfall relocation and come into compliance with applicable water quality standards. Limitations have been calculated based on technology only, to begin on the effective date of the permit and expire on June 12, 2008. After the expiration of the compliance schedule, Lyondell Chemical Company will be subject to **ALL** water quality limitations set forth in the permit.
18. Outfalls A10 (Interim and Final), Outfalls B10 (Interim and Final), Outfalls C10 (Interim and Final), Outfalls D10 (Interim and Final), E10 (Interim and Final), F10 (Interim and Final), or G10 (Interim and Final) - Monitoring frequencies for 1,3-Dichloropropylene, Hexachlorobenzene, and Hexachlorobutadiene have been increased from 1/year to 1/ 6 months based on these parameters being water quality limited. The frequency for Total Nickel has been established at 1/ 2 months.
19. Special biomonitoring requirements/language has been suggested and incorporated into this permit under Part II.S. Until June 12, 2008, biomonitoring testing will be conducted quarterly on existing Outfall 010, A10, B10, or C10. If a toxicity failure (lethal and/or sub-lethal) is experienced to either species from these outfalls during this period, LDEQ recommends that the permittee conduct an investigation in an attempt to determine those actions necessary to achieve compliance with water quality-based effluent limits by reducing an effluent's toxicity to an acceptable level. This investigation may include a process which combines toxicity testing and analyses of the physical and chemical characteristics of a toxic effluent to identify the constituents causing effluent toxicity and/or treatment methods which will reduce the effluent toxicity. The goal of this investigation would be to lead to the successful identification of a toxicant and subsequent elimination of effluent toxicity at the critical dilution.

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Commencing June 13, 2008, if the permittee begins discharging at the new outfall D10, E10, F10, or G10, biomonitoring will be conducted quarterly using the dilution series and critical dilution as outlined in Part II.U. However, if the new outfall is not completed or constructed, the permittee will continue to discharge from the existing outfall 010, A10, B10, and C10, but Whole Effluent Toxicity (WET) limits will be implemented as outlined in Part II.T. The dilution series will remain the same and the critical dilution for each outfall will also be the WET limit. All other conditions for biomonitoring requirements with WET limits will also be implemented.

20. Proposed Outfall 110 - newly proposed internal outfall. This outfall was created at the request of the permittee to satisfy the technology based limitation, COD, as required by 40 CFR 415, Subpart AG for the HYCO Plant I discharges.

Outfall 110 will ultimately discharge through the existing Final Outfall 010, A10, B10, or C10 location in Coon Island Loop or at the Main Stem of the Calcasieu River through Final Outfall D10, E10, F10, or G10.

21. Proposed Outfall 210 - newly proposed internal outfall. This outfall was created at the request of the permittee to satisfy the technology based limitations at 40 CFR 415, Subpart AG required for the HYCO Plant III discharges.

Outfall 210 will ultimately discharge through the existing Final Outfall 010, A10, B10, or C10 location in Coon Island Loop or at the Main Stem of the Calcasieu River through Final Outfall D10, E10, F10, or G10.

22. Outfall 310 - newly proposed internal outfall. This outfall was created at the request of the permittee to account for sanitary discharges. The limitations and monitoring frequency are consistent with the Class I Sanitary General Permit, LAG530000.

23. Outfall 31A - newly proposed internal outfall. This outfall was created at the request of the permittee to account for sanitary discharges. The limitations are consistent with the Class I Sanitary General Permit, LAG530000. Due to increased flows, the monitoring frequency was established in accordance with the Class III Sanitary General Permit, LAG560000.

24. Outfall 016 - This outfall has been closed. All flows were rerouted to Outfall 020.

25. Outfall 019 - Total Zinc was removed due to it no longer being used as a cooling water additive.

26. Outfall 019 - Lyondell requests removal of Ammonia (as N) and Organic-Nitrogen due to cessation of fertilizer production. This request has been granted based on lab data submitted in the March 2005 application submittal. Lyondell screened Ammonia (as N) and Organic-Nitrogen using the following BPJ nitrogen concentrations for stormwater: 10 mg/L maximum 30-day average and 30 mg/L daily maximum. The stormwater values used for sampling were consistent with BAT limits established for similar discharges in Lyondell's previous permit.

The observed maximum 30-day average and daily maximum concentrations of Ammonia (as N) and Organic-Nitrogen were well below the concentrations above. Based on this information, it has been determined that there is no reasonable potential to discharge these pollutants, therefore, no requirements were placed on this outfall for Ammonia (as N) or Organic-Nitrogen.

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27. Outfalls 019 and 020 - Lyondell requested removal of Total Copper and Total Mercury, however, the Upper Calcasieu Estuary Toxics TMDL issued in the Federal Register on June 13, 2002, recommends reporting for both pollutants on stormwater outfalls. Lyondell performed sampling on Outfalls 019 and 020 and presented data to LDEQ in a document dated August 30, 2004. Since stormwater is intermittent with temporal variances, Lyondell used the acute numeric criteria of 3.63  $\mu\text{g/L}$  for copper and 2  $\mu\text{g/L}$  for mercury to compare sample results. The laboratory used a method detection limit of 3.0  $\mu\text{g/L}$  for copper and 0.060  $\mu\text{g/L}$  for mercury. Lab data presented in the August 2004 document showed the presence of copper in the outfall discharges above detection of 3.0  $\mu\text{g/L}$  and mercury below the 0.060  $\mu\text{g/L}$  detection. Therefore, Total Mercury has been dropped and Total Copper will continue to be monitored at Outfalls 019 and 020. The frequency of sampling for Total Copper has been reduced from 1/event to 1/quarter on both Outfalls as recommended by the TMDL and to be consistent with current LDEQ guidance on stormwater discharges.
28. Outfall 020 - Lyondell requests removal of Ammonia (as N) and Organic-Nitrogen due to cessation of fertilizer production. This request has been granted based on lab data submitted in the March 2005 application submittal. Lyondell screened Ammonia (as N) and Organic-Nitrogen using the following BPJ nitrogen concentrations for stormwater: 10 mg/L maximum 30-day average and 30 mg/L daily maximum. The stormwater values used for sampling were consistent with BAT limits established for similar discharges in Lyondell's previous permit.

The observed maximum 30-day average and daily maximum concentrations of Ammonia (as N) and Organic-Nitrogen were well below the concentrations above. Based on this information, it has been determined that there is no reasonable potential to discharge these pollutants, therefore, no requirements were placed on this outfall for Ammonia (as N) or Organic-Nitrogen.

Lyondell also conducted sampling for Nitrate-Nitrogen using the stormwater concentrations 5 mg/L maximum 30-day average and 15 mg/L daily maximum. Lab results reported were 5.93 mg/L and 11.9 mg/L which was above the screened concentration for the average. It has been determined there is reasonable potential for discharge of Nitrate-Nitrogen at this outfall. Limitations were established for this parameter at 5 mg/L maximum 30-day average and 15 mg/L daily maximum based on BPJ and similar discharges with established BAT limits from the previous permit.

29. Outfall 022 - Lyondell requests removal of Ammonia (as N) and Organic-Nitrogen due to cessation of fertilizer production. This request has been denied based on lab data submitted in the March 2005 application addendum submittal. Lyondell screened this parameters using the following BPJ nitrogen concentrations for stormwater: 10 mg/L maximum 30-day average and 30 mg/L daily maximum. The stormwater values used for sampling were consistent with BAT limits established for similar discharges in Lyondell's previous permit.

The observed maximum 30-day average and daily maximum concentrations of Ammonia (as N) were reported as 8.46 mg/L and 20.8 mg/L. The analytical results were below the 10 mg/L 30-day average, however, it was determined that the concentrations exist at levels that indicate a reasonable potential for discharge of this pollutant and is near enough to treatable levels to warrant a limit. Based on this information the following limitations for Ammonia (as N) were established: 10 mg/L average and 30 mg/L maximum.

Lab results reported for Organic-Nitrogen were 25.7 mg/L maximum 30-day average and 75.4 mg/L daily maximum, which are well above the values used for screening. Based on this

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data, it was determined that there is reasonable potential for discharge of Organic-Nitrogen at this outfall. Limitations were established for this parameter at 10 mg/L maximum 30-day average and 30 mg/L daily maximum based on BPJ and similar discharges with established BAT limits from the previous permit.

30. Outfalls 025 and 026 - Lyondell requests removal of Ammonia (as N) and Organic-Nitrogen due to cessation of fertilizer production. This request was granted based on lab data submitted in the March 2005 application addendum submittal. Lyondell screened Ammonia (as N) and Organic-Nitrogen using the following BPJ nitrogen concentrations for stormwater: 10 mg/L maximum 30-day average and 30 mg/L daily maximum. The stormwater values used for sampling were consistent with BAT limits established for similar discharges in Lyondell's previous permit.

The observed maximum 30-day average and daily maximum concentrations were well below the 10 mg/L and 30 mg/L concentrations for screening on both parameters, therefore, it has been determined that there is no reasonable potential to discharge these pollutants at this outfall. No limitations were established on these outfalls for Ammonia (as N) or Organic-Nitrogen.

31. Outfalls 019, 022, 025, and 026 - The measurement frequency has been reduced on all the parameters from 1/event to 1/quarter based on current LDEQ guidance on similar discharges.
32. Outfall 028 - This outfall has been closed. All flows were rerouted to Outfall 010, A10, B10, C10, D10, E10, F10, and/or G10.
33. Outfall 029 - This outfall no longer has a continuous discharge due to the cessation of fertilizer production. It is an intermittent waste stream that contains stormwater and miscellaneous utility wastewaters. It also can accept dilute mixtures of wastewater and stormwater from sump X-201. Wastewaters from sump X-201 will only be diverted to this outfall during periods of heavy rain or unusual hydraulics conditions, after first flush of a quarter inch of rainfall has been collected and pumped to the non-biological treatment system.
34. Outfall 029 - Lyondell requests removal of the parameters Ammonia (as N), Organic-Nitrogen, & Nitrate-Nitrogen due to cessation of fertilizer production. This request has been granted based on lab data submitted in the March 2005 application addendum submittal. Lyondell screened these parameters using the following BPJ nitrogen concentrations for stormwater: 10 mg/L maximum 30-day average and 30 mg/L daily maximum for Ammonia (as N) and Organic -Nitrogen and 5 mg/L maximum 30-day average and 15 mg/L daily maximum for Nitrate-Nitrogen. The stormwater values used for sampling were consistent with BAT limits established for similar discharges in Lyondell's previous permit.

The observed maximum 30-day average and daily maximum concentrations of Ammonia (as N), Organic-Nitrogen, and Nitrate-Nitrogen were well below the above stated concentrations for screening. Based on this data it has been determined that there is no reasonable potential for discharge of Ammonia (as N), Organic-Nitrogen, or Nitrate-Nitrogen, therefore, no limits were placed on this outfall for these parameters.

35. Outfall 029 - BOD5, TSS, Total Chromium, and Total Zinc have been removed due to the cessation of fertilizer production and/or their use as cooling water additives. The following

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parameters and limitations have been placed on this outfall: Flow - Report, TOC - 70 mg/L daily max, Oil & Grease - 15 mg/L daily max, and pH - 6.0-9.0 standard units. These limitations are consistent with current LDEQ guidance, reasonable potential for discharge of these pollutants, and similar outfalls at Lyondell.

36. Outfall 029 - A Lyondell request to remove biomonitoring requirements from this outfall has been denied based upon a recommendation by the LDEQ Toxicity Section (see Appendix E).
37. Outfall 032 - This outfall has been closed. The area has been re-graded for sheet flow runoff from site.
38. Internal Outfall 500 - Newly added hydrostatic test discharge outfall. The limitations and frequencies are consistent with those set in the Hydrostatic Test General Permit, LAG67000. The discharges from this outfall can be discharged through ANY final permitted outfall.
39. Permit limits for Ammonia (as N); Organic -N; Nitrate -N; Total Chromium; Total Zinc; TRC for Lyondell (formerly permitted as Olin Chemical Corporation and ARCO Chemical Company) were previously calculated as the combined sum of Outfalls 001, 010 and 029. This proposed permit will assign individual limitations to every outfall without combining as a sum and are consistent with the previous permit unless otherwise stated.
40. A Lyondell request to revise Part II language to allow biomonitoring frequency reductions to remain in effect until permit reissuance, has been denied. Biomonitoring requirements are assigned in accordance with the LDEQ/OES Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, EPA Region 6 Post-Third Round Whole Effluent Toxicity Testing Frequencies (Revised June 30, 2000) (Rationale, Exception 1), and the Best Professional Judgement (BPJ) of the reviewer. The recommendation (in Appendix E) does not allow for a frequency reduction therefore, all references to biomonitoring frequency reductions have been removed.
41. A Minimum Quantification Level (MQL) evaluation was done for the parameters listed in the Calcasieu Estuary Toxics TMDL. The evaluation was done to determine compliance with the waste load allocations (WLAs) established in the TMDL and to ensure state water quality standards are being met. Based on Lyondell's flow and the assigned WLAs, it has been determined that site specific MQLs are not necessary to ensure compliance and therefore, the MQLs listed in Part II.J of the permit are sufficient at this time.

#### **IX. Permit Limit Rationale:**

The following section sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. Also set forth are any calculations or other explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guideline or performance standard provisions as required under LAC 33:IX.2707/40 CFR Part 122.44 and reasons why they are applicable or an explanation of how the alternate effluent limitations were developed.

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A. TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Following regulations promulgated at LAC 33:IX.2707.L.2.b/40 CFR Part 122.44(l)(2)(ii), the draft permit limits are based on either technology-based effluent limits pursuant to LAC 33:IX.2707.A/40 CFR Part 122.44(a) or on State water quality standards and requirements pursuant to LAC 33:IX.2707.D/40 CFR Part 122.44(d), whichever are more stringent.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Regulations promulgated at LAC 33:IX.2707.A/40 CFR Part 122.44(a) require technology-based effluent limitations to be placed in LPDES permits based on effluent limitations guidelines where applicable, on BPJ (best professional judgement) in the absence of guidelines, or on a combination of the two. The following is a rationale for types of wastewaters. See outfall information descriptions for associated outfall(s) in Section VII.

Outfall 010 discharges to the Calcasieu River via Coon Island Loop. Outfalls A10, B10, and C10 are in the same location as Outfall 010, but are assigned different designators to identify multiple operational phases and different limitations assigned to each operational phase. The applicant has proposed to move the location of this outfall to the Main Stem of the Calcasieu River in order to achieve compliance with water quality standards. Outfall D10 is the new relocated outfall. Outfalls E10, F10, and G10 are the same outfall as D10, but are given different outfall designators to identify multiple operational phases and different limitations assigned to each operational phase. This will aide LDEQ's Compliance Group and ensure that the correct Discharge Monitoring Reports (DMRs) are submitted to this Office.

Internal Outfall 110 and 210 are newly created internal outfalls to measure COD contributions from Inorganic Chemical Sources.

1. Outfalls 001, 010, A10, B10, C10, D10, E10, F10, G10, 110, 210, 310, and 31A  
 - Process Wastewaters

**\*Outfall 001** - the discharge of process wastewater from the Nitric Acid Plant; non-process area stormwater; non-process wastewaters; utility wastewaters; cooling water blowdown from the Nitric Acid Plant; Sabine River Water; previously tested hydrostatic test wastewaters from Internal Outfall 500; and stormwater from former manufacturing and support areas, and the Veolia demineralized water manufacturing area.

<u>PARAMETER</u>	<u>MONTHLY AVERAGE (Mg/L)</u>	<u>DAILY MAXIMUM (Mg/L)</u>
Flow	Report	Report (continuous recording)
Oil and Grease	174	261
Nitrate Nitrogen	87	261
TRC	3.5	8.7
TSS	Report	Report
pH, Std. Units	6.0 (min)	9.0 (max)

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(\*) continuous recorder with pH excursions.

Calculations and basis of permit limitations are found at Appendix A and associated appendices. See below for site-specific considerations.

#### **Site-Specific Consideration(s)**

TSS - Reporting requirement retained from previous permit.

**\*Outfall 010** -the discharge of treated process wastewaters from the TDA Plant; TDA Still Bottoms; Hydrazine (Raschig) from Arch Chemical; Bioloab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; process and non-process area stormwater; Hydrazine Ketazine wastewaters from Arch Chemical; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; previously monitored/treated sanitary wastewater from Internal Outfall 310; utility wastewaters including, but not limited to demineralized H<sub>2</sub>O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.

Lyondell Chemical Company is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

<u>Manufacturing Operation</u>	<u>Guideline</u>
Organic chemical manufacturing	40 CFR 414, Subpart(s) G,H, I,& J
Inorganic chemical manufacturing	
Hydrochloric Acid	40 CFR 415 (Subpart G [Reserved])
Nitric Acid	40 CFR 418.53(b) (Subpart E)
Oxygen and Nitrogen	40 CFR 415.492 (Subpart AW)
Carbon Monoxide and	
By-Product Hydrogen	40 CFR 415.332 (Subpart AG)

Calculations and basis of permit limitations are found at Appendix A-2, A-3 and associated appendices. See below for site-specific considerations.

#### **Site-Specific Consideration(s)**

**COD** - COD is a guideline parameter for discharges that fall under the Inorganic Chemical Guidelines. In order to properly ensure that guideline limitations are being met, monitoring for COD has been established at Internal Outfalls 110 and 210.

**Ammonia Nitrogen** - Two Ammonia Nitrogen limitation have been placed on this outfall. These limitations were established to represent periods of low ammonia nitrogen discharge that may occur during operating conditions 1-4 (condition 1-no hydrazine production underway, condition 2-only ketazine production underway, condition 3- unsymmetrical dimethyl hydrazine [UDMH] and ketazine production underway, and condition 4-anhydrous hydrazine [AH] production underway) and higher ammonia nitrogen discharges that may occur during operation of condition 5 (monomethyl hydrazine [MMH] and ketazine production underway).

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<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Ammonia Nitrogen (Conditions 1-4)	495	743
Ammonia Nitrogen (Condition 5)	1571	2907

Under the existing LPDES permit, Outfall 010 discharges to the Calcasieu River via Coon Island Loop. The applicant has proposed to move the location of this outfall to the Main Stem of the Calcasieu River in order to achieve compliance with water quality standards. In accordance with LAC 33:IX1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company until June 12, 2008 to come into compliance with current water quality standards.

The following **Technology Based Limitations** have been applied to the existing location of **Outfall 010 in lieu of Water Quality Based Limitations for non-TMDL parameters** beginning on the effective date of the permit and lasting until June 12, 2008:

<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Total Nickel	4.8204	11.3521
Hexachlorobenzene	1.5000	5.9900
Hexachlorabutadiene	1.1100	2.9700
Carbon Tetrachloride	1.1100	2.9400
1,3 -Dichloropropylene	1.5400	6.0400

**\*Outfall A10** -the discharge of treated process wastewaters from the TDA Plant; TDA Still Bottoms; Hydrazine (Raschig) from Arch Chemical; Bioloab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; process and non-process area stormwater; Hydrazine Ketazine wastewaters from Arch Chemical; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; previously monitored/treated sanitary wastewater from Internal Outfall 310; utility wastewaters including, but not limited to demineralized H2O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.

Lyondell Chemical Company is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:



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<u>Manufacturing Operation</u>	<u>Guideline</u>
Organic chemical manufacturing	40 CFR 414, Subpart(s) G, H, & J
Inorganic chemical manufacturing	
Hydrochloric Acid	40 CFR 415 (Subpart G [Reserved])
Nitric Acid	40 CFR 418.53(b) (Subpart E)
Oxygen and Nitrogen	40 CFR 415.492 (Subpart AW)
Carbon Monoxide and By-Product Hydrogen	40 CFR 415.332 (Subpart AG)

Calculations and basis of permit limitations are found at Appendix A-4, A-5, and associated appendices. See below for site-specific considerations.

#### **Site-Specific Consideration(s)**

COD - COD is a guideline parameter for discharges that fall under the Inorganic Chemical Guidelines. In order to properly ensure that guideline limitations are being met, monitoring for COD has been established at Internal Outfalls 110 and 210.

Ammonia Nitrogen - Two Ammonia Nitrogen limitation have been placed on this outfall. These limitations were established to represent periods of low ammonia nitrogen discharge that may occur during operating conditions 1-4 (condition 1-no hydrazine production underway, condition 2-only ketazine production underway, condition 3- unsymmetrical dimethyl hydrazine [UDMH] AND ketazine production underway, and condition 4-anhydrous hydrazine [AH] production underway) and higher ammonia nitrogen discharges that may occur during operation of condition 5 (monomethyl hydrazine [MMH] and ketazine production underway).

<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Ammonia Nitrogen (Conditions 1-4)	495	743
Ammonia Nitrogen (Condition 5)	1571	2907

Under the existing LPDES permit, Outfall A10 discharges to the Calcasieu River via Coon Island Loop. The applicant has proposed to move the location of this outfall to the Main Stem of the Calcasieu River in order to achieve compliance with water quality standards. In accordance with LAC 33:IX.1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company until June 12, 2008 to come into compliance with current water quality standards.

The following **Technology Based Limitations** have been applied to the existing location of **Outfall A10 in lieu of Water Quality Based Limitations for non-TMDL parameters**. In accordance with LAC 33:IX.1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company beginning on the effective date of the permit, before the outfall relocation, and lasting until June 12, 2008 to come into compliance with current water quality standards:

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<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Total Nickel	4.8204	11.3521
Hexachlorobenzene	2.0188	8.1781
Hexachlorabutadiene	1.4626	3.9140
Carbon Tetrachloride	1.4626	3.9140
1,3 -Dichloropropylene	2.0188	8.1781

**\*Outfall B10** - the discharge of treated process wastewaters from the Hydrazine (Raschig) from Arch Chemical; Bioloab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; non-process area stormwater; Hydrazine Ketazine wastewaters from Arch Chemical; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; previously monitored/treated sanitary wastewater from Internal Outfall 310; utility wastewaters including, but not limited to demineralized H<sub>2</sub>O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.

Lyondell Chemical Company is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

<u>Manufacturing Operation</u>	<u>Guideline</u>
Organic chemical manufacturing	40 CFR 414, Subpart(s) G, H, & J
Inorganic chemical manufacturing	
Hydrochloric Acid	40 CFR 415 (Subpart G [Reserved])
Nitric Acid	40 CFR 418.53(b) (Subpart E)
Oxygen and Nitrogen	40 CFR 415.492 (Subpart AW)
Carbon Monoxide and	
By-Product Hydrogen	40 CFR 415.332 (Subpart AG)

Calculations and basis of permit limitations are found at Appendix A-6, A-7, and associated appendices. See below for site-specific considerations.

**Site-Specific Consideration(s)**

**COD** - COD is a guideline parameter for discharges that fall under the Inorganic Chemical Guidelines. In order to properly ensure that guideline limitations are being met, monitoring for COD has been established at Internal Outfalls 110 and 210.

**Ammonia Nitrogen** - Two Ammonia Nitrogen limitation have been placed on this outfall. These limitations were established to represent periods of low ammonia nitrogen discharge that may occur during operating conditions 1-4 (condition 1-no hydrazine production underway, condition 2-only ketazine production underway, condition 3- unsymmetrical dimethyl hydrazine [UDMH] AND ketazine production underway, and condition 4-anhydrous hydrazine [AH] production underway) and higher ammonia nitrogen discharges that may occur during operation of condition 5 (monomethyl hydrazine [MMH] and ketazine production underway).

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<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Ammonia Nitrogen (Conditions 1-4)	495	743
Ammonia Nitrogen (Condition 5)	1571	2907

Under the existing LPDES permit, Outfall B10 discharges to the Calcasieu River via Coon Island Loop. The applicant has proposed to move the location of this outfall to the Main Stem of the Calcasieu River in order to achieve compliance with water quality standards. In accordance with LAC 33:IX1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company until June 12, 2008 to come into compliance with current water quality standards.

The following **Technology Based Limitations** have been applied to the existing location of **Outfall B10 in lieu of Water Quality Based Limitations for non-TMDL parameters**. In accordance with LAC 33:IX.1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company beginning on the effective date of the permit, before the outfall relocation, and lasting until June 12, 2008 to come into compliance with current water quality standards:

<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Hexachlorobenzene	1.5186	6.1518
Hexachlorobutadiene	1.1002	2.9442
Carbon Tetrachloride	1.1002	2.9442
1,3 -Dichloropropylene	1.5186	6.1518

**\*Outfall C10** - the discharge of treated process wastewaters from the TDI Plant, TDI Vent Scrub; TDA Plant; TDA Still Bottoms; Hydrazine (Raschig) from Arch Chemical; Bioloab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; process and non-process area stormwater; previously monitored/treated sanitary wastewater from Internal Outfall 31A; Hydrazine Ketazine wastewaters from Arch Chemical; TDI Incinerator wastewater; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; and utility wastewaters including, but not limited to demineralized H<sub>2</sub>O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.

Lyondell Chemical Company is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

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<u>Manufacturing Operation</u>	<u>Guideline</u>
Organic chemical manufacturing	40 CFR 414, Subpart(s) G, H, I, & J
Inorganic chemical manufacturing	
Hydrochloric Acid	40 CFR 415 (Subpart G [Reserved])
Nitric Acid	40 CFR 418.53(b) (Subpart E)
Oxygen and Nitrogen	40 CFR 415.492 (Subpart AW)
Carbon Monoxide and By-Product Hydrogen	40 CFR 415.332 (Subpart AG)

Calculations and basis of permit limitations are found at Appendix A-8, A-9, and associated appendices. See below for site-specific considerations.

#### **Site-Specific Consideration(s)**

COD - COD is a guideline parameter for discharges that fall under the Inorganic Chemical Guidelines. In order to properly ensure that guideline limitations are being met, monitoring for COD has been established at Internal Outfalls 110 and 210.

Ammonia Nitrogen - Two Ammonia Nitrogen limitation have been placed on this outfall: These limitations were established to represent periods of low ammonia nitrogen discharge that may occur during operating conditions 1-4 (condition 1-no hydrazine production underway, condition 2-only ketazine production underway, condition 3- unsymmetrical dimethyl hydrazine [UDMH] AND ketazine production underway, and condition 4-anhydrous hydrazine [AH] production underway) and higher ammonia nitrogen discharges that may occur during operation of condition 5 (monomethyl hydrazine [MMH] and ketazine production underway).

<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Ammonia Nitrogen (Conditions 1-4)	495	743
Ammonia Nitrogen (Condition 5)	1571	2907

Under the existing LPDES permit, Outfall C10 discharges to the Calcasieu River via Coon Island Loop. The applicant has proposed to move the location of this outfall to the Main Stem of the Calcasieu River in order to achieve compliance with water quality standards. In accordance with LAC 33:IX.1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company until June 12, 2008 to come into compliance with current water quality standards.

The following **Technology Based Limitations** have been applied to the existing location of **Outfall C10 in lieu of Water Quality Based Limitations for non-TMDL parameters**. In accordance with LAC 33:IX.1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company beginning on the effective date of the permit, before the outfall relocation, and lasting until June 12, 2008 to come into compliance with current water quality standards:

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<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Total Nickel	8.8796	20.9117
Hexachlorobenzene	2.0200	7.9800
Hexachlorobutadiene	1.5200	4.0300
Carbon Tetrachloride	1.5000	3.9600
1,3 -Dichloropropylene	2.1000	8.0800

**\*Outfall D10** - the discharge of treated process wastewaters from the TDA Plant; TDA Still Bottoms; Hydrazine (Raschig) from Arch Chemical; Bioloab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; process and non-process area stormwater; Hydrazine Ketazine wastewaters from Arch Chemical; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; previously monitored/treated sanitary wastewater from Internal Outfall 310; utility wastewaters including, but not limited to demineralized H<sub>2</sub>O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.

Lyondell Chemical Company is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

<u>Manufacturing Operation</u>	<u>Guideline</u>
Organic chemical manufacturing	40 CFR 414, Subpart(s) G, H, I, & J
Inorganic chemical manufacturing	
Hydrochloric Acid	40 CFR 415 (Subpart G [Reserved])
Nitric Acid	40 CFR 418.53(b) (Subpart E)
Oxygen and Nitrogen	40 CFR 415.492 (Subpart AW)
Carbon Monoxide and By-Product Hydrogen	40 CFR 415.332 (Subpart AG)

Calculations and basis of permit limitations are found at Appendix A-2, A-3, and associated appendices. See below for site-specific considerations.

#### **Site-Specific Consideration(s)**

**COD** - COD is a guideline parameter for discharges that fall under the Inorganic Chemical Guidelines. In order to properly ensure that guideline limitations are being met, monitoring for COD has been established at Internal Outfalls 110 and 210.

**Ammonia Nitrogen** - Two Ammonia Nitrogen limitation have been placed on this outfall. These limitations were established to represent periods of low ammonia nitrogen discharge that may occur during operating conditions 1-4 (condition 1-no hydrazine production underway, condition 2-only ketazine production underway, condition 3- unsymmetrical dimethyl hydrazine [UDMH] AND ketazine production underway, and condition 4-anhydrous hydrazine [AH] production underway) and higher ammonia nitrogen discharges that may

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occur during operation of condition 5 (monomethyl hydrazine [MMH] and ketazine production underway).

<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Ammonia Nitrogen (Conditions 1-4)	495	743
Ammonia Nitrogen (Condition 5)	1571	2907

The applicant has proposed to move the location of Outfalls 010, A10, B10, and/or C10 to the Main Stem of the Calcasieu River to form proposed **Outfall D10** in order to achieve compliance with water quality standards. In accordance with LAC 33:IX.1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company until June 12, 2008 to come into compliance with current water quality standards.

The following **Technology Based Limitations** have been applied to the proposed location of **Outfall D10 in lieu of Water Quality Based Limitations for non-TMDL parameters**. In accordance with LAC 33:IX.1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company beginning on the effective date of the permit after the outfall relocation and lasting until June 12, 2008 to come into compliance with current water quality standards:

<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Hexachlorobenzene	1.5000	5.9900
Hexachlorobutadiene	1.1100	2.9700

**\*Outfall E10** - the discharge of treated process wastewaters from the TDA Plant; TDA Still Bottoms; Hydrazine (Raschig) from Arch Chemical; Bioloab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; process and non-process area stormwater; Hydrazine Ketazine wastewaters from Arch Chemical; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; previously monitored/treated sanitary wastewater from Internal Outfall 310; utility wastewaters including, but not limited to demineralized H2O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.

Lyondell Chemical Company is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

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<u>Manufacturing Operation</u>	<u>Guideline</u>
Organic chemical manufacturing	40 CFR 414, Subpart(s) G, H, & J
Inorganic chemical manufacturing	
Hydrochloric Acid	40 CFR 415 (Subpart G [Reserved])
Nitric Acid	40 CFR 418.53(b) (Subpart E)
Oxygen and Nitrogen	40 CFR 415.492 (Subpart AW)
Carbon Monoxide and	
By-Product Hydrogen	40 CFR 415.332 (Subpart AG)

Calculations and basis of permit limitations are found at Appendix A-4, A-5, and associated appendices. See below for site-specific considerations.

#### Site-Specific Consideration(s)

COD - COD is a guideline parameter for discharges that fall under the Inorganic Chemical Guidelines. In order to properly ensure that guideline limitations are being met, monitoring for COD has been established at Internal Outfalls 110 and 210.

Ammonia Nitrogen - Two Ammonia Nitrogen limitation have been placed on this outfall. These limitations were established to represent periods of low ammonia nitrogen discharge that may occur during operating conditions 1-4 (condition 1-no hydrazine production underway, condition 2-only ketazine production underway, condition 3- unsymmetrical dimethyl hydrazine [UDMH] AND ketazine production underway, and condition 4-anhydrous hydrazine [AH] production underway) and higher ammonia nitrogen discharges that may occur during operation of condition 5 (monomethyl hydrazine [MMH] and ketazine production underway).

<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Ammonia Nitrogen (Conditions 1-4)	495	743
Ammonia Nitrogen (Condition 5)	1571	2907

The applicant has proposed to move the location of Outfalls 010, A10, B10, and/or C10 to the Main Stem of the Calcasieu River to form proposed **Outfall E10** in order to achieve compliance with water quality standards. In accordance with LAC 33:IX.1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company until June 12, 2008 to come into compliance with current water quality standards.

The following **Technology Based Limitations** have been applied to the proposed location of **Outfall E10 in lieu of Water Quality Based Limitations for non-TMDL parameters**. In accordance with LAC 33:IX.1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company beginning on the effective date of the permit after the outfall relocation and lasting until June 12, 2008 to come into compliance with current water quality standards:

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<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Hexachlorobenzene	2.0188	8.1781
Hexachlorabutadiene	1.4626	3.9140

**\*Outfall F10** - the discharge of treated process wastewaters from the Hydrazine (Raschig) from Arch Chemical; Bioloab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; non-process area stormwater; Hydrazine Ketazine wastewaters from Arch Chemical; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; previously monitored/treated sanitary wastewater from Internal Outfall 310; utility wastewaters including, but not limited to demineralized H<sub>2</sub>O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.

Lyondell Chemical Company is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

<u>Manufacturing Operation</u>	<u>Guideline</u>
Organic chemical manufacturing	40 CFR 414, Subpart(s) G, H, & J
Inorganic chemical manufacturing	
Hydrochloric Acid	40 CFR 415 (Subpart G [Reserved])
Nitric Acid	40 CFR 418.53(b) (Subpart E)
Oxygen and Nitrogen	40 CFR 415.492 (Subpart AW)
Carbon Monoxide and	
By-Product Hydrogen	40 CFR 415.332 (Subpart AG)

Calculations and basis of permit limitations are found at Appendix A-6, A-7, and associated appendices. See below for site-specific considerations.

#### Site-Specific Consideration(s)

**COD** - COD is a guideline parameter for discharges that fall under the Inorganic Chemical Guidelines. In order to properly ensure that guideline limitations are being met, monitoring for COD has been established at Internal Outfalls 110 and 210.

**Ammonia Nitrogen** - Two Ammonia Nitrogen limitation have been placed on this outfall. These limitations were established to represent periods of low ammonia nitrogen discharge that may occur during operating conditions 1-4 (condition 1-no hydrazine production underway, condition 2-only ketazine production underway, condition 3- unsymmetrical dimethyl hydrazine [UDMH] AND ketazine production underway, and condition 4-anhydrous hydrazine [AH] production underway) and higher ammonia nitrogen discharges that may occur during operation of condition 5 (monomethyl hydrazine [MMH] and ketazine production underway).



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<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Ammonia Nitrogen (Conditions 1-4)	495	743
Ammonia Nitrogen (Condition 5)	1571	2907

The applicant has proposed to move the location of Outfalls 010, A10, B10, and/or C10 to the Main Stem of the Calcasieu River to form proposed **Outfall F10** in order to achieve compliance with water quality standards. In accordance with LAC 33:IX.1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company until June 12, 2008 to come into compliance with current water quality standards.

The following **Technology Based Limitations** have been applied to the proposed location of **Outfall F10 in lieu of Water Quality Based Limitations for non-TMDL parameters**. In accordance with LAC 33:IX.1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company beginning on the effective date of the permit after the outfall relocation and lasting until June 12, 2008 to come into compliance with current water quality standards:

<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Hexachlorobenzene	1.5186	6.1518
Hexachlorobutadiene	1.1002	2.9442

**\*Outfall G10** - the discharge of treated process wastewaters from the TDI Plant, TDI Vent Scrub; TDA Plant; TDA Still Bottoms; Hydrazine (Raschig) from Arch Chemical; Bioloab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; process and non-process area stormwater; previously monitored/treated sanitary wastewater from Internal Outfall 31A; Hydrazine Ketazine wastewaters from Arch Chemical; TDI Incinerator wastewater; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; and utility wastewaters including, but not limited to demineralized H<sub>2</sub>O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.

Lyondell Chemical Company is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

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<u>Manufacturing Operation</u>	<u>Guideline</u>
Organic chemical manufacturing	40 CFR 414, Subpart(s) G, H, I, & J
Inorganic chemical manufacturing	
Hydrochloric Acid	40 CFR 415 (Subpart G [Reserved])
Nitric Acid	40 CFR 418.53(b) (Subpart E)
Oxygen and Nitrogen	40 CFR 415.492 (Subpart AW)
Carbon Monoxide and	
By-Product Hydrogen	40 CFR 415.332 (Subpart AG)

Calculations and basis of permit limitations are found at Appendix A-8, A-9, and associated appendices. See below for site-specific considerations.

#### **Site-Specific Consideration(s)**

COD - COD is a guideline parameter for discharges that fall under the Inorganic Chemical Guidelines. In order to properly ensure that guideline limitations are being met, monitoring for COD has been established at Internal Outfalls 110 and 210.

Ammonia Nitrogen - Two Ammonia Nitrogen limitation have been placed on this outfall. These limitations were established to represent periods of low ammonia nitrogen discharge that may occur during operating conditions 1-4 (condition 1-no hydrazine production underway, condition 2-only ketazine production underway, condition 3- unsymmetrical dimethyl hydrazine [UDMH] AND ketazine production underway, and condition 4-anhydrous hydrazine [AH] production underway) and higher ammonia nitrogen discharges that may occur during operation of condition 5 (monomethyl hydrazine [MMH] and ketazine production underway).

<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Ammonia Nitrogen (Conditions 1-4)	495	743
Ammonia Nitrogen (Condition 5)	1571	2907

The applicant has proposed to move the location of Outfalls 010, A10, B10, and/or C10 to the Main Stem of the Calcasieu River to form proposed **Outfall G10** in order to achieve compliance with water quality standards. In accordance with LAC 33:IX.1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company until June 12, 2008 to come into compliance with current water quality standards.

The following **Technology Based Limitations** have been applied to the proposed location of **Outfall G10 in lieu of Water Quality Based Limitations for non-TMDL parameters**. In accordance with LAC 33:IX.1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company beginning on the effective date of the permit after the outfall relocation and lasting until June 12, 2008 to come into compliance with current water quality standards:

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<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Total Nickel	8.8796	20.9117
Hexachlorobenzene	2.0200	7.9800
Hexachlorabutadiene	1.5200	4.0300

**\*Internal Outfall 110** -the discharge of wastewaters from the HYCO Plant I.

<u>PARAMETER</u>	<u>MONTHLY AVERAGE (LBS/DAY)</u>	<u>DAILY MAXIMUM (LBS/DAY)</u>
Flow	Report	Report
COD	50.5	101

Flow - Flow is established in accordance with LAC 33:IX.2707.I.1.b.

COD is a guideline parameter for discharges that fall under the Inorganic Chemical Guidelines. In order to properly ensure that guideline limitations are being met, monitoring for COD has been established at this Internal Outfall.

Lyondell Chemical Company is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

<u>Manufacturing Operation</u>	<u>Guideline</u>
Inorganic chemical manufacturing Carbon Monoxide and By-Product Hydrogen	40 CFR 415.332 (Subpart AG)

Calculations and basis of permit limitations are found below.

**Site-Specific Consideration(s)**

The discharges from Internal Outfalls 110 are covered under 40 CFR 415.332 (Subpart AG), therefore, they will receive COD allocations based on production. The following calculations were done to determine the COD limitations:

<u>Inorganic Chemical Manufacturing</u>	<u>Production (LBS)</u>
Hydrogen Production	14,194,743
Carbon Monoxide Production	59,593,092
Total Annual Production (per KLBS)	73,788
Total Daily Production (per KLBS/day)	202

Technology Based Effluent Limitations per 40 CFR 415, Subpart AG

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<u>PARAMETER</u>	<u>AVERAGE (LBS/KLBS)</u>	<u>MAXIMUM (LBS/KLBS)</u>
COD	0.25	0.50

Outfall Daily Production in KLBS/day \* 0.25 LBS/KLBS = Monthly Average in LBS/day

Outfall Daily Production in KLBS/day \* 0.50 LBS/KLBS = Daily Maximum in LBS/day

Calculated Limits for Internal Outfall 110

<u>PARAMETER</u>	<u>MONTHLY AVERAGE (LBS/day)</u>	<u>DAILY MAXIMUM (LBS/day)</u>
COD	50.5	101

**\*Internal Outfall 210** -the discharge of wastewaters from the HYCO Plant III.

<u>PARAMETER</u>	<u>MONTHLY AVERAGE (LBS/DAY)</u>	<u>DAILY MAXIMUM (LBS/DAY)</u>
Flow	Report	Report
COD	43.4	86.8

Flow - Flow is established in accordance with LAC 33:IX.2707.I.1.b.

COD is a guideline parameter for discharges that fall under the Inorganic Chemical Guidelines. In order to properly ensure that guideline limitations are being met, monitoring for COD has been established at this Internal Outfall.

Lyondell Chemical Company is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

<u>Manufacturing Operation</u>	<u>Guideline</u>
Inorganic chemical manufacturing	
Carbon Monoxide and	
By-Product Hydrogen	40 CFR 415.332 (Subpart AG)

Calculations and basis of permit limitations are found below.

#### **Site-Specific Consideration(s)**

The discharges from Internal Outfalls 210 are covered under 40 CFR 415.332 (Subpart AG), therefore, they will receive COD allocations based on production. The following calculations were done to determine the COD limitations:

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<u>Inorganic Chemical Manufacturing</u>	<u>Production (LBS)</u>
Hydrogen Production	11,747,541
Carbon Monoxide Production	51,593,396
Total Annual Production (per KLBS)	63,341
Total Daily Production (per KLBS/day)	173.54

Technology Based Effluent Limitations per 40 CFR 415, Subpart AG

<u>PARAMETER</u>	<u>AVERAGE (LBS/KLBS)</u>	<u>MAXIMUM (LBS/KLBS)</u>
COD	0.25	0.50

Outfall Daily Production in KLBS/day \* 0.25 LBS/KLBS = Monthly Average in LBS/day

Outfall Daily Production in KLBS/day \* 0.50 LBS/KLBS = Daily Maximum in LBS/day

Calculated Limits for Internal Outfall 210

<u>PARAMETER</u>	<u>MONTHLY AVERAGE (LBS/day)</u>	<u>DAILY MAXIMUM (LBS/day)</u>
COD	43.4	86.8

**\*Internal Outfalls 310 and 31A** - the discharge of treated sanitary wastewater

Sanitary wastewaters are regulated in accordance with LAC 33:IX.711 or 709.B, by BPJ utilizing the sanitary general permits issued by this Office, and the Louisiana Water Quality Management Plan, Appendices B (Areawide Sanitary Effluent Limits Policy) and C (Statewide Sanitary Effluent Limits Policy), as applicable. Concentration limits are used in accordance with LAC 33:IX.2707.F.1.b which states that mass limitations are not necessary when applicable standards and limitations are expressed in other units of measurement. LAC 33:IX.709.B references LAC 33:IX.711 which express BOD<sub>5</sub> and TSS in terms of concentration.

<u>PARAMETER</u>	<u>MONTHLY AVERAGE (Mg/L)</u>	<u>WEEKLY AVERAGE (Mg/L)</u>
Flow, MGD	Report	Report
BOD <sub>5</sub>	N/A	45
TSS	N/A	45
Fecal Coliform colonies/100 ml	N/A	400

**Site-Specific Consideration(s)**

Limitations for all parameters are based on the LPDES Class I Sanitary General Permits, LAG530000.

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2. Outfalls 008 & 029 - Utility Wastewaters

Utility wastewaters including, but not limited to cooling tower blowdown, boiler blowdown, scrubber water, filter backwash, boiler feed water, non-contact cooling water, once-through cooling water, etc., being discharged to discrete outfalls receive BPJ limitations/monitoring requirements according to the following schedule:

**\*Outfall 008** - the discharge of once through non-contact cooling water and de minimis discharges of utility wastewaters.

<b>PARAMETER</b>	<b>MONTHLY AVERAGE (Mg/L)</b>	<b>DAILY MAXIMUM (Mg/L)</b>
Flow, MGD	Report	Report
TOC (net)	Report	5
Temperature (°F)	N/A	105
pH, Std. Units (*)	6.0 (min)	9.0 (max)

(\*) continuous recorder with pH excursions.

**Site-Specific Consideration(s)**

Flow, TOC (net), Temperature, and pH - Requirements retained from previous permit (August 10, 1993 permit modification).

**\*Outfall 029** -discharge of low contamination potential stormwater runoff from the east side of the closed West Pond, wastewater treatment plant area, and sheet flow from the access road; periodic diversion of wastewater during preventative maintenance activities for sumps X-303 (Powerhouse boiler blowdown and oil sump wastewaters and pilot plant) and X-307 (cooling water blowdown from TDI and TDA); non-process area utility wastewaters including, but not limited to steam condensate from steam traps, supply well head leakage, and fire monitor leakage; and a dilute mixture of wastewater and stormwater from sump X-201 (to be used during periods of heavy rain or unusual hydraulics conditions, after first flush of a quarter inch of rainfall has been collected and pumped to the non-biological treatment system); and previously monitored hydrostatic test waste water from Internal Outfall 500.

<b>PARAMETER</b>	<b>MONTHLY AVERAGE (Mg/L)</b>	<b>DAILY MAXIMUM (Mg/L)</b>
Flow, MGD	Report	Report
TOC	Report	70
Oil and Grease	Report	15
pH, Std. Units	6.0 (min)	9.0 (max)

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### **Site-Specific Consideration(s)**

Outfall 029 will only be used during periods of heavy rain or unusual hydraulics conditions, after first flush of a quarter inch of rainfall has been collected and pumped to the non-biological treatment system. Due to the type of discharge and intermittent nature, LDEQ deems it appropriate to permit this outfall similar to other stormwater outfalls at Lyondell, therefore, BOD<sub>5</sub> and TSS have been deleted as parameters and the daily maximum limitation for Oil & Grease has been reduced to 15 mg/L to be consistent with current LDEQ guidance on stormwater outfalls. TOC has been established at 70 mg/L to be consistent with other stormwater outfalls at Lyondell per the previous permit.

#### **3. Outfall(s) 019, 020, 022, 025, & 026 - Stormwater**

Uncontaminated or low potential contaminated stormwater discharged through discrete outfall(s) shall receive the following BPJ limitations in accordance with this Office's guidance on stormwater, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA Region 6).

**\*Outfall 019** - low contamination potential stormwater runoff from manufacturing and support areas; de minimis non-process area utility wastewaters including, but not limited to steam condensate from steam traps, supply well head leakage, and fire monitor leakage; and previously monitored hydrostatic test wastewater(s) from Internal Outfall 500.

<b><u>PARAMETER</u></b>	<b><u>MONTHLY AVERAGE (Mg/L)</u></b>	<b><u>DAILY MAXIMUM (Mg/L)</u></b>
Flow, MGD	Report	Report
TOC	Report	70
Oil and Grease	Report	15
Total Copper	Report	Report
pH, Std. Units	6.0 (min)	9.0 (max)

### **Site-Specific Consideration(s)**

Flow, TOC, Oil & Grease, and pH - Requirements retained from previous permit (August 10, 1993 permit modification).

Lyondell requested removal of Total Copper and Total Mercury, however, the Upper Calcasieu Estuary Toxics TMDL issued in the Federal Register on June 13, 2002, recommends reporting for both pollutants on stormwater outfalls. Lyondell performed sampling on Outfall 019 and presented data to LDEQ in a document dated August 30, 2004. Since stormwater is intermittent with temporal variances, Lyondell used the acute numeric criteria of 3.63 µg/L for copper and 2 µg/L for mercury to compare sample results. The laboratory used a method detection limit of 3.0 µg/L for copper and 0.060 µg/L for mercury. Lab data presented in the August 2004 document showed the presence of copper in the outfall discharges above detection of 3.0 µg/L and mercury below the 0.060 µg/L detection. Therefore, Total Mercury has been dropped and Total Copper will continue to be monitored at Outfall 019.

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**\*Outfall 020** - the discharge of stormwater runoff from manufacturing and support areas and former Outfall 016; previously monitored hydrostatic test wastewater(s) from Internal Outfall 500; and utility wastewaters including, but not limited to steam condensate from steam traps, supply well head leakage, and fire monitor leakage.

<u>PARAMETER</u>	<u>MONTHLY AVERAGE (Mg/L)</u>	<u>DAILY MAXIMUM (Mg/L)</u>
Flow, MGD	Report	Report
TOC	Report	70
Oil and Grease	Report	15
Total Copper	Report	Report
Nitrate-Nitrogen	5	15
pH, Std. Units	6.0 (min)	9.0 (max)

**Site-Specific Consideration(s)**

Flow, TOC, Oil & Grease, and pH - Requirements retained from previous permit (August 10, 1993 permit modification).

Nitrate-Nitrogen - Limitations were established at 5 mg/L monthly average and 15 mg/L daily maximum based on lab data reported in the March 2005 application addendum, reasonable potential to discharge this pollutant, and BPJ.

Lyondell requested removal of Total Copper, however, the Upper Calcasieu Estuary Toxics TMDL issued in the Federal Register on June 13, 2002, recommends reporting for Total Copper and Total Mercury on stormwater outfalls. Lyondell performed sampling on Outfall 020 and presented data to LDEQ in a document dated August 30, 2004. Since stormwater is intermittent with temporal variances, Lyondell used the acute numeric criteria of 3.63  $\mu\text{g/L}$  for copper and 2  $\mu\text{g/L}$  for mercury to compare sample results. The laboratory used a method detection limit of 3.0  $\mu\text{g/L}$  for copper and 0.060  $\mu\text{g/L}$  for mercury. Lab data presented in the August 2004 document showed the presence of copper in the outfall discharges above detection 3.0  $\mu\text{g/L}$  and mercury below the 0.060  $\mu\text{g/L}$  detection. Therefore, Total Mercury has been dropped and Total Copper will continue to be monitored at Outfall 020.

**\*Outfall 022** - the discharge of low contamination potential stormwater runoff from manufacturing and support areas; intermittent overflow from the TDI Incinerator emergency fire deluge system; de minimis quantities of non-process utility wastewaters including, but not limited to steam condensate from steam traps, supply well head leakage, and fire monitor leakage; and previously monitored hydrostatic test wastewaters from Internal Outfall 500.



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<b><u>PARAMETER</u></b>	<b><u>MONTHLY AVERAGE (Mg/L)</u></b>	<b><u>DAILY MAXIMUM (Mg/L)</u></b>
Flow, MGD	Report	Report
TOC	Report	70
Oil and Grease	Report	15
Ammonia (as N)	10	30
Organic Nitrogen	10	30
pH, Std. Units	6.0 (min)	9.0 (max)

**Site-Specific Consideration(s)**

Flow, TOC, Oil & Grease, and pH - Requirements retained from previous permit (August 10, 1993 permit modification).

Ammonia (as N) and Organic-Nitrogen - Limitations were established at 10 mg/L monthly average and 30 mg/L daily maximum based on lab data reported in the March 2005 application addendum, reasonable potential to discharge these pollutants, and BPJ.

The Upper Calcasieu Estuary Toxics TMDL issued in the Federal Register on June 13, 2002, recommends reporting for Total Copper and Total Mercury on stormwater outfalls. Lyondell performed sampling on Outfall 022 and presented data to LDEQ in a document dated August 30, 2004. Since stormwater is intermittent with temporal variances, Lyondell used the acute numeric criteria of 3.63  $\mu\text{g/L}$  for copper and 2  $\mu\text{g/L}$  for mercury to compare sample results. The laboratory used a method detection limit of 3.0  $\mu\text{g/L}$  for copper and 0.060  $\mu\text{g/L}$  for mercury. Results at this outfall showed a detection below 0.060  $\mu\text{g/L}$  for mercury and or 3.0  $\mu\text{g/L}$  for copper. Therefore, Total Copper and Total Mercury requirements were not incorporated into this outfall at this time.

**\*Outfall 025** - the discharge of low contamination potential stormwater runoff from manufacturing and support areas; de minimis quantities of non-process utility wastewaters including, but not limited to steam condensate from steam traps, supply well head leakage, and fire monitor leakage; and previously monitored hydrostatic test wastewaters from Internal Outfall 500.

<b><u>PARAMETER</u></b>	<b><u>MONTHLY AVERAGE (Mg/L)</u></b>	<b><u>DAILY MAXIMUM (Mg/L)</u></b>
Flow, MGD	Report	Report
TOC	Report	70
Oil and Grease	Report	15
pH, Std. Units	6.0 (min)	9.0 (max)

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**\*Outfall 026** - the discharge of stormwater runoff from manufacturing and support areas; previously monitored hydrostatic test wastewater(s) from Internal Outfall 500; and utility wastewaters including, but not limited to steam condensate from steam traps, supply well head leakage, and fire monitor leakage.

<u>PARAMETER</u>	<u>MONTHLY AVERAGE (Mg/L)</u>	<u>DAILY MAXIMUM (Mg/L)</u>
Flow, MGD	Report	Report
TOC	Report	70
Oil and Grease	Report	15
pH, Std. Units	6.0 (min)	9.0 (max)

**Site-Specific Consideration(s) for Outfalls 025 and 026**

Flow, TOC, Oil & Grease, and pH - Requirements retained from previous permit (August 10, 1993 permit modification).

The Upper Calcasieu Estuary Toxics TMDL issued in the Federal Register on June 13, 2002, recommends reporting for Total Copper and Total Mercury on stormwater outfalls. Lyondell performed sampling on Outfalls 025 and 026 and presented data to LDEQ in a document dated August 30, 2004. Since stormwater is intermittent with temporal variances, Lyondell used the acute numeric criteria of 3.63  $\mu\text{g/L}$  for copper and 2  $\mu\text{g/L}$  for mercury to compare sample results. The laboratory used a method detection limit of 3.0  $\mu\text{g/L}$  for copper and 0.060  $\mu\text{g/L}$  for mercury. Neither of these outfalls showed a detection above 0.060  $\mu\text{g/L}$  for mercury or 3.0  $\mu\text{g/L}$  for copper. Therefore, Total Copper and Total Mercury requirements were not incorporated into the permit at this time.

4. Internal Outfall 500 - hydrostatic test discharges

Hydrostatic test discharges, being discharged to discrete outfalls receive BPJ limitations/monitoring requirements according to the following schedule as per the Hydrostatic Test General Permit, LAG670000:

<u>PARAMETER</u>	<u>MONTHLY AVERAGE (Mg/L)</u>	<u>DAILY MAXIMUM (Mg/L)</u>
TSS	N/A	90
Oil and Grease	N/A	15
TOC	N/A	50
Benzene	N/A	50 $\mu\text{g/L}$
Total BTEX	N/A	250 $\mu\text{g/L}$
Total Lead	N/A	50 $\mu\text{g/L}$

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### **Site-Specific Consideration(s)**

TSS, Oil & Grease, TOC, Benzene, Total BTEX, and Total Lead - Limitations are consistent with the Hydrostatic Test General Permit, LAG670000.

Hydrostatic test discharges are permitted to be discharged through any final outfall.

### **C. WATER QUALITY-BASED EFFLUENT LIMITATIONS**

Technology-based effluent limitations were screened against state water quality numerical standard based limits by following guidance procedures established in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001. Calculations, results, and documentation are given in Appendix B.

In accordance with LAC 33:IX.2707.D.1/40 CFR § 122.44(d)(1), the existing (or potential) discharge (s) was evaluated in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001, to determine whether pollutants would be discharged "at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard." Calculations, results, and documentation are given in Appendix B.

The following pollutants received water quality based effluent limits:

<b><u>PARAMETER(S)</u></b>
Total Copper
Total Mercury
Benzo(a)anthracene
Benzo(a)pyrene
Total Nickel
Hexachlorobenzene
Hexachlorobutadiene
Carbon Tetrachloride
1,3-Dichloropropylene

Minimum quantification levels (MQL's) for state water quality numerical standards-based effluent limitations are set at the values listed in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001. They are also listed in Part II of the permit.

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### **TMDL Waterbodies**

#### **Outfalls 001, 008, 010, A10, B10, C10, D10, E10, F10, G10, 110, 210, 310, 31A, 019, 020, 022, 029, and 500**

Outfalls 001, 008, 010, A10, B10, C10, D10, E10, F10, G10, 110, 210, 310, 31A, 019, 020, 029, and 500 discharges process wastewater and process area stormwater, sanitary wastewater, non-process area stormwater runoff, and utility wastewaters including once through non-contact cooling water, cooling tower blowdown, and other de-minimis amounts of miscellaneous utility discharges to the Calcasieu River Clooney Island Loop, Coon Island Loop, and the Main Channel of the Calcasieu River via local drainage to Subsegment 030301 of the Calcasieu River Basin. Subsegment 030301 was not listed on the 2004 303(d) list of impairments due to the Upper Calcasieu Estuary Toxics TMDL being issued June 13, 2002. This TMDL addressed Copper, Mercury, and Priority Organics.

#### **Copper, Mercury, and Priority Organics**

The TMDL for Toxics for the Calcasieu Estuary was finalized on June 13, 2002, addressing the presence of toxic substances, including copper, mercury, and priority organics in the watershed. The applicant's facility received the following limits in this TMDL at Outfalls 010, A10, B10, C10, D10, E10, F10, and G10:

<b><u>PARAMETER(S)</u></b>	<b><u>DAILY MAX LIMIT (LBS/DAY)</u></b>
Copper	4.5900
Mercury	0.0316
Benzo(a)Anthracene	0.3090
Benzo(a)Pyrene	0.3090

The Upper Calcasieu Estuary Toxics TMDL issued in the Federal Register on June 13, 2002, recommends reporting for Total Copper and Total Mercury on stormwater outfalls. Lyondell performed sampling on Outfalls 019, 020, 022, and 029 and presented data to LDEQ in a document dated August 30, 2004. Since stormwater is intermittent with temporal variances, Lyondell used the acute numeric criteria of 3.63  $\mu\text{g/L}$  for copper and 2  $\mu\text{g/L}$  for mercury to compare sample results. The laboratory used a method detection limit of 3.0  $\mu\text{g/L}$  for copper and 0.060  $\mu\text{g/L}$  for mercury. None of the outfalls showed a detection above 0.060  $\mu\text{g/L}$  for mercury and only two showed detection above 3.0  $\mu\text{g/L}$  for copper. Therefore, a report and monitor only requirement for Total Copper will be placed on the two outfalls, 019 and 020, with detection above the acute standard. Based on laboratory analysis submitted for the other sampled outfalls, no further requirements have been placed into the permit at this time.

#### **Outfalls 025 and 026**

Outfalls 025 and 026 discharge low contamination potential stormwater runoff from manufacturing and support areas, miscellaneous utility wastewaters, and previously monitored hydrostatic test wastewaters to Subsegment 030306 of the Calcasieu River Basin for Bayou Verdine. Subsegment 030306 was not listed on the 2004 303(d) list of impairments due to the Upper Calcasieu Estuary Toxics TMDL being issued June 13, 2002. This TMDL addressed the following impairments: priority organics, metals, mercury, nickel,

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and contaminated sediments. On June 13, 2002, the following impairments were officially delisted: oil & grease and non-priority organics. New data shows attainment for the nickel impairment.

To date one TMDL has been finalized and two impairments have been delisted for the Calcasieu River and Ship Channel Watershed.

Oil & Grease & Non-priority Organics

As per the June 13, 2002 LA TMDL Delist, oil & grease and non-priority organics have been delisted as impairments in this subsegment. Assessment of new data and information shows this subsegment is meeting water quality standards for these impairments. Consequently, no limits will be set for non-priority organics. A daily max of 15 mg/L for Oil & Grease has been placed on Outfalls 025 and 026 based on current LDEQ guidance for stormwater discharges.

Priority Organics, Metals, Mercury, Nickel, and Contaminated Sediments

Lyondell Chemical Company was not considered in the Bayou Verdine June 13, 2002, TMDL because the discharges from Outfalls 025 and 026 do not consist of process wastewater and are not expected to contribute to these impairments, therefore, no waste load allocations were given.

The Upper Calcasieu Estuary Toxics TMDL issued in the Federal Register on June 13, 2002, recommends reporting for Total Copper and Total Mercury on stormwater outfalls. Lyondell performed sampling on Outfalls 025 and 026 and presented data to LDEQ in a document dated August 30, 2004. Since stormwater is intermittent with temporal variances, Lyondell used the acute numeric criteria of 3.63  $\mu\text{g/L}$  for copper and 2  $\mu\text{g/L}$  for mercury to compare sample results. The laboratory used a method detection limit of 3.0  $\mu\text{g/L}$  for copper and 0.060  $\mu\text{g/L}$  for mercury. Neither outfall showed a detection above 0.060  $\mu\text{g/L}$  for mercury and or 3.0  $\mu\text{g/L}$  for copper. Therefore, no further requirements have been placed into the permit at this time.

A reopener clause will be established in the permit to include more stringent limits based on final loading allocations in the completed and approved TMDL.

Monitoring frequencies for water quality based limited parameters are established in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001.

**Site-Specific Consideration(s)**

Under the existing LPDES permit, Outfall 010 discharges to the Calcasieu River via Coon Island Loop. The applicant has proposed to move the location of this outfall to the Main Stem of the Calcasieu River in order to achieve compliance with water quality standards. In accordance with LAC 33:IX.1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company until June 12, 2008 to come into compliance with current water quality standards. This applies to Outfalls 010, A10, B10, C10, D10, E10, F10, and G10.

Lyondell Chemical Company will be subject to the following **Water Quality Based Limitations at Outfall 010** (in addition to the water quality limitations addressed in the Calcasieu TMDL, see Appendix B-2), beginning on June 13, 2008:

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<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Total Nickel	1.8441	4.3780
Hexachlorobenzene	0.0003	0.0006
Hexachlorabutadiene	0.0397	0.0943
Carbon Tetrachloride	1.1100 (*)	2.9018
1,3 -Dichloropropylene	1.5400 (*)	4.6581

- (\*) The Monthly Average technology based effluent limitation was more stringent than the water quality based effluent limitation, therefore, in accordance with LAC 33:IX.2707.D.5, the more stringent limitation has been applied.

In accordance with LAC 33:IX.1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company until June 12, 2008 to come into compliance with current water quality standards. Lyondell Chemical Company will be subject to the following **Water Quality Based Limitations at Proposed Outfall A10** (in addition to the water quality limitations addressed in the Calcasieu TMDL, see Appendix B-4), beginning on June 13, 2008 (while plant is using non-biological treatment) with the TDI Unit non-operational and the TDA Unit operational and lasting through the startup of another operational phase, the relocation of this outfall to the Main Channel of the Calcasieu River, or the expiration date:

<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Total Nickel	1.8441	4.3780
Hexachlorobenzene	0.0003	0.0006
Hexachlorabutadiene	0.0397	0.0943
Carbon Tetrachloride	1.2193	2.9018
1,3 -Dichloropropylene	1.9621	4.6581

In accordance with LAC 33:IX.1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company until June 12, 2008 to come into compliance with current water quality standards. Lyondell Chemical Company will be subject to the following **Water Quality Based Limitations at Proposed Outfall B10** (in addition to the water quality limitations addressed in the Calcasieu TMDL, see Appendix B-6), beginning on June 13, 2008 (while plant is using non-biological treatment) with the TDA and TDI Unit non-operational and lasting through the startup of another operational phase, the relocation of this outfall to the Main Channel of the Calcasieu River, or the expiration date:

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<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Hexachlorobenzene	0.0003	0.0006
Hexachlorabutadiene	0.0381	0.0904
Carbon Tetrachloride	1.1002 (*)	2.8948
1,3 -Dichloropropylene	1.5186 (*)	4.4646

- (\*) The Monthly Average technology based effluent limitation was more stringent than the water quality based effluent limitation, therefore, in accordance with LAC 33:IX.2707.D.5, the more stringent limitation has been applied.

In accordance with LAC 33:IX.1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company until June 12, 2008 to come into compliance with current water quality standards. Lyondell Chemical Company will be subject to the following **Water Quality Based Limitations at Proposed Outfall C10** (in addition to the water quality limitations addressed in the Calcasieu TMDL, see Appendix B-8), beginning on June 13, 2008 (while plant is using biological treatment) where the TDI and TDA Units are both operational and lasting through the startup of another operational phase, the relocation of this outfall to the Main Channel of the Calcasieu River or the expiration date :

<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Total Nickel	2.0131	4.7792
Hexachlorobenzene	0.0003	0.0006
Hexachlorabutadiene	0.0434	0.1030
Carbon Tetrachloride	1.2258	2.9173
1,3 -Dichloropropylene	2.1000(*)	5.0849

- (\*) The Monthly Average technology based effluent limitation was more stringent than the water quality based effluent limitation, therefore, in accordance with LAC 33:IX.2707.D.5, the more stringent limitation has been applied.

In accordance with LAC 33:IX.1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company until June 12, 2008 to come into compliance with current water quality standards. Lyondell Chemical Company will be subject to the following **Water Quality Based Limitations at Proposed Outfall D10** (in addition to the water quality limitations addressed in the Calcasieu TMDL, see Appendix B-3), beginning on June 13, 2008, after the relocation of Outfall 010, A10, B10, or C10 into the Main Channel of the Calcasieu River (while plant is using biological treatment) and the TDI Unit is non-operational and the TDA Unit is operational and lasting through the startup of another operational phase or permit expiration date:

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<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Hexachlorobenzene	0.0049	0.0116
Hexachlorabutadiene	0.1633	0.3877

In accordance with LAC 33:IX.1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company until June 12, 2008 to come into compliance with current water quality standards. Lyondell Chemical Company will be subject to the following **Water Quality Based Limitations at Proposed Outfall E10** (in addition to the water quality limitations addressed in the Calcasieu TMDL, see Appendix B-5), beginning on June 13, 2008, after the relocation of Outfall 010, A10, B10, or C10 into the Main Channel of the Calcasieu River (while plant is using non-biological treatment) and the TDI Unit is non-operational and the TDA Unit is operational and lasting through the startup of another operational phase or the expiration date:

<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Hexachlorobenzene	0.0049	0.0116
Hexachlorabutadiene	0.1633	0.3877

In accordance with LAC 33:IX.1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company until June 12, 2008 to come into compliance with current water quality standards. Lyondell Chemical Company will be subject to the following **Water Quality Based Limitations at Proposed Outfall F10** (in addition to the water quality limitations addressed in the Calcasieu TMDL, see Appendix B-7), beginning on June 13, 2008, after the relocation of Outfall 010, A10, B10, or C10 into the Main Channel of the Calcasieu River (while plant is using non-biological treatment) and the TDA and TDI Units are both non-operational and lasting through the startup of another operational phase or the expiration date:

<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Hexachlorobenzene	0.0049	0.0116
Hexachlorabutadiene	0.1616	0.3837

In accordance with LAC 33:IX.1109.D.1., the Department of Environmental Quality has granted Lyondell Chemical Company until June 12, 2008 to come into compliance with current water quality standards. Lyondell Chemical Company will be subject to the following **Water Quality Based Limitations at Proposed Outfall G10** (in addition to the water quality limitations addressed in the Calcasieu TMDL, see Appendix B-9), beginning on June 13, 2008, after the relocation of Outfall 010, A10, B10, or C10 into the Main Channel of the Calcasieu River (while the plant is using biological treatment) and the TDA and TDI Units are both operational and lasting through the startup of another operational phase or the expiration date:



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<b><u>PARAMETER</u></b>	<b><u>MONTHLY AVERAGE LBS/DAY</u></b>	<b><u>DAILY MAXIMUM LBS/DAY</u></b>
Total Nickel	7.7467	18.3911
Hexachlorobenzene	0.0049	0.0117
Hexachlorabutadiene	0.1669	0.3963

In addition to the compliance schedules above for Outfalls 010, A10, B10, C10, D10, E10, F10, and G10 for the relocation, Lyondell Chemical Company will also be subject to the following requirements/limitations from the Upper Calcasieu Estuary TMDL issued June 13, 2002.

Interim effluent limits commence on the effective date of the permit and expire on June 12, 2008.

**Interim effluent reporting requirements:**

**Outfall 010 or D10**

- Total Copper Report lbs/day daily average
- Total Mercury Report lbs/day daily average
- Benzo (a) anthracene 0.2000 lbs/day daily average  
0.5200 lbs/day daily maximum
- Benzo (a) pyrene 0.2100 lbs/day daily average  
0.5300 lbs/day daily maximum

**Outfall A10 or E10**

- Total Copper Report lbs/day daily average
- Total Mercury Report lbs/day daily average
- Benzo (a) anthracene 0.1957 lbs/day daily average  
0.4841 lbs/day daily maximum
- Benzo (a) pyrene 0.2060 lbs/day daily average  
0.4944 lbs/day daily maximum

**Outfall B10 or F10**

- Total Copper Report lbs/day daily average
- Total Mercury Report lbs/day daily average
- Benzo (a) anthracene 0.1472 lbs/day daily average  
0.3641 lbs/day daily maximum
- Benzo (a) pyrene 0.1550 lbs/day daily average  
0.3719 lbs/day daily maximum

**Outfall C10 or G10**

- Total Copper Report lbs/day daily average
- Total Mercury Report lbs/day daily average
- Benzo (a) anthracene 0.3200 lbs/day daily average  
0.8100 lbs/day daily maximum
- Benzo (a) pyrene 0.3300 lbs/day daily average  
0.8300 lbs/day daily maximum

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**The final effluent limits commence on June 13, 2008.**

The final effluent schedule will require the following limitations:

**Outfalls 010, A10, B10, C10, D10, E10, F10 and/or G10**

•	Total Copper	4.5900 lbs/day daily maximum
•	Total Mercury	0.0316 lbs/day daily maximum
•	Benzo (a) anthracene	0.3090 lbs/day daily maximum
•	Benzo (a) pyrene	0.3090 lbs/day daily maximum

The TMDL assigned allocations for daily max monitoring only. There are no requirements placed on these parameters for monthly average monitoring.

Federal regulations under 40 CFR 130.7 require the State to incorporate all final TMDLs into its current Water Quality Management Plan (WQMP). The State is also required to ensure consistency with the WQMP requirements approved by EPA under Section 208(b) of the Clean Water Act (CWA), as cited under LAC 33.IX.2707.D.6. Since the requirements established in the Final TMDL (Federal Register Notice: Volume 67, Number 114, pages 40735 - 40737, 6/13/2002) are water quality-based effluent limitations that are part of the State's current Water Quality Management Plan (Volume 8), and are more stringent than the technology based effluent limitations, the TMDL waste load allocations must remain in the permit.

**D. Biomonitoring Requirements**

It has been determined that there may be pollutants present in the effluent which may have the potential to cause toxic conditions in the receiving stream. The State of Louisiana has established a narrative criteria which states, "toxic substances shall not be present in quantities that alone or in combination will be toxic to plant or animal life." The Office of Environmental Services requires the use of the most recent EPA biomonitoring protocols.

Whole effluent biomonitoring is the most direct measure of potential toxicity which incorporates both the effects of synergism of effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity. The biomonitoring procedures stipulated as a condition of this permit for Outfall(s) 001, 010, A10, B10, C10, D10, E10, F10, G10, 029, and 008 are as follows:

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#### TOXICITY TESTS

#### FREQUENCY

#### **Outfalls 001, 010, A10, B10, C10, D10, E10, F10, G10, and 029**

Chronic static renewal 7-day  
 survival and growth test  
 using Mysidopsis bahia  
 [Method 1007.0]

1/quarter

Chronic static renewal 7-day  
 larval survival and growth test  
 using inland silverside minnow  
 (Menidia beryllina) [Method 1006.0]

1/quarter

**Outfall 008\*** only required during periods of chlorination, biocide(s) usage, or other potentially toxic substances discharged on an intermittent basis.

#### TOXICITY TESTS

#### FREQUENCY

Chronic static renewal 7-day  
 survival and growth test  
 using Mysidopsis bahia  
 [Method 1007.0]

1/quarter

Chronic static renewal 7-day  
 larval survival and growth test  
 using inland silverside minnow  
 (Menidia beryllina) [Method 1006.0]

1/quarter

Toxicity tests shall be performed in accordance with protocols described in the latest revision of the "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms." The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the State water quality standards. The biomonitoring frequency has been established to reflect the likelihood of ambient toxicity and to provide data representative of the toxic potential of the facility's discharge in accordance with regulations promulgated at LAC 33:IX.2715/40 CFR Part 122.48.

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen, conductivity, and salinity shall be documented in a full report according to the test method publication mentioned in the previous paragraph. The permittee shall submit a copy of the first full report to the Office of Environmental Compliance. The full report and subsequent reports are to be retained for three (3) years following the provisions of Part III.C.3 of this permit. The permit requires the submission of certain toxicity testing information as an attachment to the Discharge Monitoring Report. This permit may be reopened to require effluent limits, additional testing, and/or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body. Modification or revocation of the permit is subject to the provisions of LAC 33:IX.3105/40 CFR 124.5. Accelerated or intensified toxicity testing may be required in accordance with Section 308 of the Clean Water Act.

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Dilution Series

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests.

Outfall 001

These additional effluent concentrations shall be 2%, 3%, 4%, 6%, and 8%. The low-flow effluent concentration (critical dilution) is defined as 6% effluent.

Outfall 008

These additional effluent concentrations shall be 12%, 16%, 22%, 29%, and 38%. The low-flow effluent concentration (critical dilution) is defined as 29% effluent.

Existing Outfall 010 - Coon Island Loop Location

These additional effluent concentrations shall be 3%, 4%, 6%, 7%, and 10%. The low-flow effluent concentration (critical dilution) is defined as 7% effluent.

Existing Outfall A10 - Coon Island Loop Location

These additional effluent concentrations shall be 3%, 4%, 6%, 7%, and 10%. The low-flow effluent concentration (critical dilution) is defined as 7% effluent.

Existing Outfall B10 - Coon Island Loop Location

These additional effluent concentrations shall be 3%, 4%, 5%, 7%, and 9%. The low-flow effluent concentration (critical dilution) is defined as 7% effluent.

Existing Outfall C10 - Coon Island Loop Location

These additional effluent concentrations shall be 4%, 5%, 7%, 9%, and 12%. The low-flow effluent concentration (critical dilution) is defined as 9% effluent.

Outfall D10 - Main Channel of the Calcasieu Location

The additional effluent concentrations shall be 0.5%, 0.7%, 0.9%, 1.2%, and 1.6%. The low-flow effluent concentration (critical dilution) is defined as 1.2% effluent.

Outfall E10 - Main Channel of the Calcasieu Location

The additional effluent concentrations shall be 0.5%, 0.7%, 0.9%, 1.2%, and 1.6%. The low-flow effluent concentration (critical dilution) is defined as 1.2% effluent.

Outfall F10 - Main Channel of the Calcasieu Location

The additional effluent concentrations shall be 0.5%, 0.6%, 0.8%, 1.1%, and 1.4%. The low-flow effluent concentration (critical dilution) is defined as 1.1% effluent.

Outfall G10 - Main Channel of the Calcasieu Location

The additional effluent concentrations shall be 0.6%, 0.8%, 1.1%, 1.4%, and 1.9%. The low-flow effluent concentration (critical dilution) is defined as 1.4% effluent.

Outfall 029

These additional effluent concentrations shall be 32%, 42%, 56%, 75%, and 100%. The low-flow effluent concentration (critical dilution) is defined as 75% effluent.

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#### **Site Specific Consideration(s)**

Outfalls 010, A10, B10, and/or C10 - commencing on June 13, 2008 (if the outfall has not been relocated to the Main Stem of the Calcasieu River) Whole Effluent Toxicity (WET) limits will be implemented. The dilution series will remain the same and the critical dilution for the existing outfall will also be the WET limit. All other conditions for biomonitoring requirements with WET limits will also be implemented.

#### **E. MONITORING FREQUENCIES**

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity [LAC 33:IX.2715/40 CFR 122.48(b)] and to assure compliance with permit limitations [LAC 33:IX.2707.I./40 CFR 122.44(I)]. The following section(s) explain the rationale for the monitoring frequencies stated in the draft permit.

1. Outfall 001 - the discharge of process wastewater from the Nitric Acid Plant; non-process area stormwater; non-process wastewaters; utility wastewaters; cooling water blowdown from the Nitric Acid Plant; Sabine River Water; previously tested hydrostatic test wastewaters from Internal Outfall 500; and stormwater from former manufacturing and support areas, and the Veolia demineralized water manufacturing area.

<b><u>PARAMETER(S)</u></b>	<b><u>MONITORING FREQUENCY</u></b>
Flow	Continuous
pH	Continuous
Nitrate Nitrogen	1/week
TSS	1/week
TRC	1/week
Oil & Grease	1/ 2 months

#### **Site-Specific Consideration(s)**

Oil & Grease, TRC, and TSS - Lyondell has requested a reduction in the measurement frequency for these parameters. Based on compliance history in accordance with the requirements stated in the USEPA Memorandum "Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies," the measurement frequency for Oil & Grease has been changed from 1/week to 1/ 2 months and the frequencies for TRC and TSS have been changed from 3/week to 1/week.

Flow and pH - continuous monitoring has been retained from the current permit for both parameters.

Nitrate Nitrogen - Lyondell's request to remove this parameter was denied based on lab data which indicated there is still reasonable potential for discharge of this pollutant. The proposed monitoring frequency has been established at 1/week.

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2. Outfall 008 -the discharge of once through non-contact cooling water and de minimis discharges of utility wastewaters.

Utility wastewater pollutants being discharged to discrete outfalls shall receive monitoring frequencies according to the following schedule:

PARAMETER(S)	MONITORING FREQUENCY
Flow	Continuous
Temperature	Continuous
pH	Continuous
TOC (net)	3/week

Flow, pH, and Temperature - continuous monitoring has been retained from the current permit for all parameters.

TOC (net) - the monitoring frequency of 3/week has been retained from the current permit.

3. Outfalls 010, C10, D10, & G10 - the discharge of treated process wastewaters

**\*Outfall 010** - the discharge of treated process wastewaters from the TDA Plant; TDA Still Bottoms; Hydrazine (Raschig) from Arch Chemical; Bioloab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; process and non-process area stormwater; Hydrazine Ketazine wastewaters from Arch Chemical; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; previously monitored/treated sanitary wastewater from Internal Outfall 310; utility wastewaters including, but not limited to demineralized H<sub>2</sub>O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.

**\*Outfall C10** - the discharge of treated process wastewaters from the TDI Plant, TDI Vent Scrub; TDA Plant; TDA Still Bottoms; Hydrazine (Raschig) from Arch Chemical; Bioloab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; process and non-process area stormwater; previously monitored/treated sanitary wastewater from Internal Outfall 31A; Hydrazine Ketazine wastewaters from Arch Chemical; TDI Incinerator wastewater; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; and utility wastewaters including, but not limited to demineralized H<sub>2</sub>O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.

**\*Outfall D10** - the discharge of treated process wastewaters from the TDA Plant; TDA Still Bottoms; Hydrazine (Raschig) from Arch Chemical; Bioloab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; process and non-process area

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stormwater; Hydrazine Ketazine wastewaters from Arch Chemical; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; previously monitored/treated sanitary wastewater from Internal Outfall 310; utility wastewaters including, but not limited to demineralized H<sub>2</sub>O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.

**\*Outfall G10** - the discharge of treated process wastewaters from the TDI Plant, TDI Vent Scrub; TDA Plant; TDA Still Bottoms; Hydrazine (Raschig) from Arch Chemical; Bioloab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; process and non-process area stormwater; previously monitored/treated sanitary wastewater from Internal Outfall 31A; Hydrazine Ketazine wastewaters from Arch Chemical; TDI Incinerator wastewater; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; and utility wastewaters including, but not limited to demineralized H<sub>2</sub>O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal 110 and 210.

Flow and pH shall be monitored continuously. These monitoring frequencies were retained from the current permit.

<b><u>PARAMETER(S)</u></b>	<b><u>MONITORING FREQUENCY</u></b>
Flow	Continuous
pH	Continuous

Ammonia (as N), Organic Nitrogen, and Nitrate Nitrogen shall be monitored 3/week. These monitoring frequencies were retained from the current permit.

<b><u>PARAMETER(S)</u></b>	<b><u>MONITORING FREQUENCY</u></b>
Ammonia (as N)	3/week
Organic Nitrogen	3/week
Nitrate Nitrogen	3/week

BOD<sub>5</sub>, TRC, and TSS shall be monitored 1/week. Based on compliance history in accordance with the requirements stated in the USEPA Memorandum "Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies," the measurement frequencies for Total Residual Chlorine, BOD<sub>5</sub>, and TSS have been reduced from 3/week to 1/week.

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<b>PARAMETER(S)</b>	<b>MONITORING FREQUENCY</b>
TSS	1/week
BOD <sub>5</sub>	1/week
TRC	1/week

Those pollutants being discharged at levels less than the draft permit mass limits, but still being discharged at significant levels are proposed to be monitored 1/ 2 months. Based on compliance history in accordance with the requirements stated in the USEPA Memorandum "Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies," the measurement frequencies for Oil & Grease, Total Nickel, Carbon Tetrachloride, Chlorobenzene, Chloroform, 1,2-Dichloroethane, 1,2-Dichloropropane, Methyl Chloride, 1,1,1-Trichloroethane, Vinyl Chloride, 2,4-Dichlorophenol, 2,4-Dimethylphenol, and 2,4-Dinitrotoluene have been reduced from 1/week to 1/ 2 months.

<b>PARAMETER(S)</b>	<b>MONITORING FREQUENCY</b>
Oil & Grease	1/ 2 months
Total Nickel	1/ 2 months
Carbon Tetrachloride	1/ 2 months
Chlorobenzene	1/ 2 months
Chloroform	1/ 2 months
1,2-Dichloroethane	1/ 2 months
1,2-Dichloropropane	1/ 2 months
Methylene Chloride	1/ 2 months
1,1,1-Trichloroethane	1/ 2 months
Vinyl Chloride	1/ 2 months
2,4-Dichlorophenol	1/ 2 months
2,4-Dimethylphenol	1/ 2 months
2,4-Dinitrotoluene	1/ 2 months

Total Copper, Total Mercury, Benzo(a) anthracene, and Benzo(a) pyrene shall be monitored 1/quarter. These monitoring frequencies were established in accordance with the Upper Calcasieu Estuary TMDL issued in the Federal Register on June 13, 2002.



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<b>PARAMETER(S)</b>	<b>MONITORING FREQUENCY</b>
Total Copper	1/quarter
Total Mercury	1/quarter
Benzo(a) anthracene	1/quarter
Benzo(a) pyrene	1/quarter

1,3-Dichloropropylene, Hexachlorobenzene, and Hexachlorobutadiene shall be monitored 1/ 6 months. Monitoring frequencies for 1,3-Dichloropropylene, Hexachlorobenzene, and Hexachlorobutadiene have been increased from 1/year to 1/ 6 months based on these parameters being water quality limited.

<b>PARAMETER(S)</b>	<b>MONITORING FREQUENCY</b>
1,3-Dichloropropylene	1/ 6 months
Hexachlorobenzene	1/ 6 months
Hexachlorobutadiene	1/ 6 months

Toxic pollutants not expected to be on-site are proposed to be monitored once per year. These frequencies were retained from the current permit.

<b>PARAMETER(S)</b>	<b>MONITORING FREQUENCY</b>
Acrylonitrile	1/ year
Benzene	1/ year
Chloroethane	1/ year
1,1-Dichloroethane	1/ year
1,1-Dichloroethylene	1/ year
1,2-trans-Dichloroethylene	1/ year
Ethylbenzene	1/ year
Methyl Chloride	1/ year
Tetrachloroethylene	1/ year
Toluene	1/ year
1,1,2-Trichloroethane	1/ year
Trichloroethylene	1/ year
2-Chlorophenol	1/ year
4,6-Dinitro-o-cresol	1/ year

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PARAMETER(S)	MONITORING FREQUENCY
2,4-Dinitrophenol	1/ year
2-Nitrophenol	1/ year
4-Nitrophenol	1/ year
Phenol	1/ year
Acenaphthene	1/ year
Acenaphthylene	1/ year
Anthracene	1/ year
3,4-Benzofluoranthene	1/ year
Benzo(k)fluoranthene	1/ year
Bis(2-ethylhexyl)phthalate	1/ year
Chrysene	1/ year
1,2-Dichlorobenzene	1/ year
1,3-Dichlorobenzene	1/ year
1,4-Dichlorobenzene	1/ year
Diethyl phthalate	1/ year
Dimethyl phthalate	1/ year
Di-n-butyl phthalate	1/ year
2,6-Dinitrotoluene	1/ year
Fluoranthene	1/ year
Fluorene	1/ year
Hexachloroethane	1/ year
Naphthalene	1/ year
Nitrobenzene	1/ year
Phenanthrene	1/ year
Pyrene	1/ year
1,2,4-Trichlorobenzene	1/ year

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4. Outfalls A10, B10, E10, and F10 - the discharge of treated process wastewaters

**\*Outfall A10** - the discharge of treated process wastewaters from the TDA Plant; TDA Still Bottoms; Hydrazine (Raschig) from Arch Chemical; Bioloab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; process and non-process area stormwater; Hydrazine Ketazine wastewaters from Arch Chemical; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; previously monitored/treated sanitary wastewater from Internal Outfall 310; utility wastewaters including, but not limited to demineralized H2O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.

**\*Outfall B10** - the discharge of treated process wastewaters from the Hydrazine (Raschig) from Arch Chemical; Bioloab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; non-process area stormwater; Hydrazine Ketazine wastewaters from Arch Chemical; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; previously monitored/treated sanitary wastewater from Internal Outfall 310; utility wastewaters including, but not limited to demineralized H2O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.

**\*Outfall E10** - the discharge of treated process wastewaters from the TDA Plant; TDA Still Bottoms; Hydrazine (Raschig) from Arch Chemical; Bioloab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; process and non-process area stormwater; Hydrazine Ketazine wastewaters from Arch Chemical; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; previously monitored/treated sanitary wastewater from Internal Outfall 310; utility wastewaters including, but not limited to demineralized H2O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.

**\*Outfall F10** - the discharge of treated process wastewaters from the Hydrazine (Raschig) from Arch Chemical; Bioloab TCCA Plant; Reagent Chemicals; HYCO Plant I; HYCO III Plant; and Oxygen and Nitrogen Manufacturing wastewater from Air Products; non-process area stormwater; Hydrazine Ketazine wastewaters from Arch Chemical; Lab/Pilot Plant; water removed from liquid ammonia feedstock for Nitric Acid Plant; stormwater from Olin Corporation's caustic solution storage tank farm; previously monitored/treated sanitary wastewater from Internal Outfall 310; utility wastewaters including, but not limited to demineralized H2O from Veolia, power house and utilities wastewater, and cooling water; and wastewaters from Internal Outfalls 110 and 210.

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Flow and pH shall be monitored continuously. These monitoring frequencies were retained from the current permit.

<b><u>PARAMETER(S)</u></b>	<b><u>MONITORING FREQUENCY</u></b>
Flow	Continuous
pH	Continuous

Ammonia (as N), Organic Nitrogen, and Nitrate Nitrogen shall be monitored 3/week. These monitoring frequencies were retained from the current permit.

<b><u>PARAMETER(S)</u></b>	<b><u>MONITORING FREQUENCY</u></b>
Ammonia (as N)	3/week
Organic Nitrogen	3/week
Nitrate Nitrogen	3/week

BOD<sub>5</sub>, TRC, and TSS shall be monitored 1/week. Based on compliance history in accordance with the requirements stated in the USEPA Memorandum "Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies," the measurement frequencies for Total Residual Chlorine, BOD<sub>5</sub>, and TSS have been reduced from 3/week to 1/week.

<b><u>PARAMETER(S)</u></b>	<b><u>MONITORING FREQUENCY</u></b>
TSS	1/week
BOD <sub>5</sub>	1/week
TRC	1/week

Those pollutants being discharged at levels less than the draft permit mass limits, but still being discharged at significant levels are proposed to be monitored 1/ 2 months. Based on compliance history in accordance with the requirements stated in the USEPA Memorandum "Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies," the measurement frequencies for Oil & Grease, Total Nickel, Carbon Tetrachloride, Chlorobenzene, Chloroform, 1,2-Dichloroethane, 1,2-Dichloropropane, Methyl Chloride, 1,1,1-Trichloroethane, Vinyl Chloride, and 2,4-Dimethylphenol have been reduced from 1/week to 1/ 2 months.

<b><u>PARAMETER(S)</u></b>	<b><u>MONITORING FREQUENCY</u></b>
Oil & Grease	1/ 2 months
Total Nickel	1/ 2 months
Carbon Tetrachloride	1/ 2 months

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<b><u>PARAMETER(S)</u></b>	<b><u>MONITORING FREQUENCY</u></b>
Chlorobenzene	1/ 2 months
Chloroform	1/ 2 months
1,2-Dichloroethane	1/ 2 months
1,2-Dichloropropane	1/ 2 months
Methylene Chloride	1/ 2 months
1,1,1-Trichloroethane	1/ 2 months
Vinyl Chloride	1/ 2 months
2,4-Dimethylphenol	1/ 2 months

Total Copper, Total Mercury, Benzo(a) anthracene, and Benzo(a) pyrene shall be monitored 1/quarter. These monitoring frequencies were established in accordance with the Upper Calcasieu Estuary TMDL issued in the Federal Register on June 13, 2002.

<b><u>PARAMETER(S)</u></b>	<b><u>MONITORING FREQUENCY</u></b>
Total Copper	1/quarter
Total Mercury	1/quarter
Benzo(a) anthracene	1/quarter
Benzo(a) pyrene	1/quarter

1,3-Dichloropropylene, Hexachlorobenzene, and Hexachlorobutadiene shall be monitored 1/ 6 months. Monitoring frequencies for 1,3-Dichloropropylene, Hexachlorobenzene, and Hexachlorobutadiene have been increased from 1/year to 1/ 6 months based on these parameters being water quality limited.

<b><u>PARAMETER(S)</u></b>	<b><u>MONITORING FREQUENCY</u></b>
1,3-Dichloropropylene	1/ 6 months
Hexachlorobenzene	1/ 6 months
Hexachlorobutadiene	1/ 6 months

Toxic pollutants not expected to be on-site are proposed to be monitored once per year. These frequencies were retained from the current permit.

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<b>PARAMETER(S)</b>	<b>MONITORING FREQUENCY</b>
Acrylonitrile	1/ year
Benzene	1/ year
Chloroethane	1/ year
1,1-Dichloroethane	1/ year
1,1-Dichloroethylene	1/ year
1,2-trans-Dichloroethylene	1/ year
Ethylbenzene	1/ year
Methyl Chloride	1/ year
Tetrachloroethylene	1/ year
Toluene	1/ year
1,1,2-Trichloroethane	1/ year
Trichloroethylene	1/ year
4,6-Dinitro-o-Cresol	1/ year
2,4-Dinitrophenol	1/ year
2-Nitrophenol	1/ year
4-Nitrophenol	1/ year
Phenol	1/ year
Acenaphthene	1/ year
Acenaphthylene	1/ year
Anthracene	1/ year
3,4-Benzofluoranthene	1/ year
Benzo(k)fluoranthene	1/ year
Bis(2-ethylhexyl)phthalate	1/ year
Chrysene	1/ year
1,2-Dichlorobenzene	1/ year
1,3-Dichlorobenzene	1/ year
1,4-Dichlorobenzene	1/ year
Diethyl phthalate	1/ year

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<b>PARAMETER(S)</b>	<b>MONITORING FREQUENCY</b>
Dimethyl phthalate	1/ year
Di-n-butyl phthalate	1/ year
Fluoranthene	1/ year
Fluorene	1/ year
Hexachloroethane	1/ year
Naphthalene	1/ year
Nitrobenzene	1/ year
Phenanthrene	1/ year
Pyrene	1/ year
1,2,4-Trichlorobenzene	1/ year

5. Internal Outfall(s) 110 and 210 - Inorganic Process Wastewaters.

\***Outfall 110** - the discharge of wastewaters from the HYCO Plant I.

\***Outfall 210** - the discharge of wastewaters from the HYCO Plant III.

The monitoring frequency for COD is proposed at 3/week for both outfalls based on Best Professional Judgement (BPJ).

<b>PARAMETER(S)</b>	<b>MONITORING FREQUENCY</b>
COD	3/week

6. Internal Outfalls 310 and 31A - Sanitary Wastewater.

\***Outfall 310** - the discharge of treated sanitary wastewater.

Monitoring for all parameters is established at 1/ 6 months in accordance with the LPDES Class I Sanitary General Permit (LAG530000) for discharges less than 5,000 gallons per day and Best Professional Judgement (BPJ).

<b>PARAMETER(S)</b>	<b>MONITORING FREQUENCY</b>
All Parameters	1/ 6 months

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\*Outfall 31A - the discharge of treated sanitary wastewater.

Monitoring for all parameters is established at 1/ month in accordance with the LPDES Class III Sanitary General Permit (LAG560000) for discharges less than 50,000 gallons per day and Best Professional Judgement (BPJ).

PARAMETER(S)	MONITORING FREQUENCY
All Parameters	1/month

7. Outfall(s) 019, 020, 022, 025, 026, and 029 - Stormwater and Utility

Non-process area stormwater that is uncontaminated or has a low potential of contamination and utility wastewaters discharged at a discrete outfall.

**\*Outfall 019** - low contamination potential stormwater runoff from manufacturing and support areas; de minimis non-process area utility wastewaters including, but not limited to steam condensate from steam traps, supply well head leakage, and fire monitor leakage; and previously monitored hydrostatic test wastewater(s) from Internal Outfall 500.

**\*Outfall 020** - the discharge of stormwater runoff from manufacturing and support areas and former Outfall 016; previously monitored hydrostatic test wastewater(s) from Internal Outfall 500; and utility wastewaters including, but not limited to steam condensate from steam traps, supply well head leakage, and fire monitor leakage.

**\*Outfall 022** - low contamination potential stormwater runoff from manufacturing and support areas; intermittent overflow from the TDI Incinerator emergency fire deluge system; de minimis quantities of non-process area utility wastewaters including, but not limited to steam condensate from steam traps, supply well head leakage, and fire monitor leakage; and previously monitored hydrostatic test wastewaters from Internal Outfall 500.

**\*Outfall 025** - the discharge of low contamination potential stormwater runoff from manufacturing and support areas; de minimis quantities of non-process area utility wastewaters including, but not limited to steam condensate from steam traps, supply well head leakage, and fire monitor leakage; and previously monitored hydrostatic test wastewaters from Internal Outfall 500.

**\*Outfall 026** - the discharge of stormwater runoff from manufacturing and support areas; previously monitored hydrostatic test wastewater(s) from Internal Outfall 500; and utility wastewaters including, but not limited to steam condensate from steam traps, supply well head leakage, and fire monitor leakage.

**\*Outfall 029** - the discharge of low contamination potential stormwater runoff from the east side of the closed West Pond, wastewater treatment plant area, and sheet flow from the access road; periodic diversion of wastewater during preventative maintenance activities for sumps X-303 (Powerhouse boiler blowdown and oil sump wastewaters and pilot plant) and X-307 (cooling water blowdown from TDI and TDA); non-process area utility wastewaters including, but



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not limited to steam condensate from steam traps, supply well head leakage, and fire monitor leakage; and a dilute mixture of wastewater and stormwater from sump X-201 (to be used during periods of heavy rain or unusual hydraulics conditions, after first flush of a quarter inch of rainfall has been collected and pumped to the non-biological treatment system); and previously monitored hydrostatic test waste water from Internal Outfall 500.

<b>PARAMETER(S)</b>	<b>MONITORING FREQUENCY</b>
All parameters	1/ quarter, when discharging

Monitoring frequencies for parameters from Outfalls 019, 020, 022, 025, 026, and 029 are established in accordance with current guidance for similar discharges and Best Professional Judgement (BPJ).

8. Internal Outfall 500 - hydrostatic test wastewaters

<b>PARAMETER(S)</b>	<b>MONITORING FREQUENCY</b>
All parameters	1/ Discharge Event

Monitoring frequencies for parameters from Internal Outfall 500 are established in accordance with the requirements in the Hydrostatic Test General Permit (LAG670000) and Best Professional Judgement (BPJ).

**X. Compliance History/DMR Review:**

A compliance review was done covering the period of January 1, 2001 through February 1, 2004. The following excursions were reported during that time.

<b>DATE</b>	<b>PARAMETER</b>	<b>OUTFALL</b>	<b>REPORTED VALUE</b>	<b>PERMIT LIMIT</b>
08/31/02	TOC	025	188 mg/L dly max	70 mg/L dly max
10/31/02	Methyl Chloride	010	17.4 lbs/day dly max	4 lbs/day dly max
11/30/03	TOC	022	130 mg/L dly max	70 mg/L dly max

Inspections -

**March 12, 2003**

There were no significant issues of concern. Inspector noted a light brown discharge from Outfalls 008 and 001.

**March 10, 2004**

There were no significant areas of concern. Inspector noted a light brown discharge from Outfalls 008 and 001.

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#### **XI. "IT" Questions - Applicant's Responses**

For IT Questions and Lyondell Chemical's responses, please refer to Appendix D of the application submitted October 2003.

#### **XII. Endangered Species:**

The receiving waterbody, Subsegments 030301 and 030306 of the Calcasieu River Basin is not listed in Section II.2 of the Implementation Strategy as requiring consultation with the U.S. Fish and Wildlife Service (FWS). This strategy was submitted with a letter dated September 29, 2006 from Watson (FWS) to Brown (LDEQ). Therefore, in accordance with the Memorandum of Understanding between the LDEQ and the FWS, no further informal (Section 7, Endangered Species Act) consultation is required. It was determined that the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat.

#### **XIII. Historic Sites:**

The discharge is from an existing facility location, which does not include an expansion on undisturbed soils. Therefore, there should be no potential effect to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the "Memorandum of Understanding for the Protection of Historic Properties in Louisiana Regarding LPDES Permits" no consultation with the Louisiana State Historic Preservation Officer is required.

#### **XIV. Tentative Determination:**

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to permit for the discharge described in the application.

#### **XV. Variances:**

No requests for variances have been received by this Office.

#### **XVI. Public Notices:**

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit and may request a public hearing to clarify issues involved in the permit decision at this Office's address on the first page of the fact sheet. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

A local newspaper of general circulation

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